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Planning Study for the Economic Growth of the State of Maine, Volume One

Armour Research Foundation

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ARMOUR RESEARCH FOUNDATION
of
Illinois Institute of Technology
Technology Center
Chicago 16, Illinois

ARF PROJECT NO. 9-020

PLANNING STUDY FOR THE ECONOMIC GROWTH
OF THE STATE OF MAINE

FINAL REPORT
VOLUME ONE OF FIVE VOLUMES
SUMMARY

FOR

Maine Department of Economic Development
State House; Augusta, Maine

June 15, 1960

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INTRODUCTION

This study was initiated by Maine's Department of Economic Development to serve as an impartial analysis of the State's growth potential. The Arthur Research Foundation was requested to conduct this analysis and to develop a program for attaining this economic potential. This program may be called a plan of action, in to serve as a base and guide for the activities of the Department.

The analysis was quite thorough. Staff members of the Arthur Research Foundation personally interviewed many persons within the State to learn about their present activities and future plans. In addition, meetings with city and county officials, the staff surveyed a number of various industrial and commercial concerns in the State.

CHAPTER ONE

INTRODUCTION

One of the trends within the State and in the Northeast, particularly in the State of Maine, is the increasing importance of the State's natural resources. The Arthur Research Foundation, in its various groups in the Federal Government and in private industry, has been active in the State and in the Northeast. The Arthur Research Foundation has been active in the State and in the Northeast. The Arthur Research Foundation has been active in the State and in the Northeast.

This report is presented in five volumes. This volume, the first, contains a brief summary of the whole report. Included in this volume are the survey of the State, the comparison of the State's resources with those of the other States, the survey of the State's resources, the survey of the State's resources, the survey of the State's resources.

INTRODUCTION

This study was instituted by Maine's Department of Economic Development to serve as an impartial analysis of the State's growth potential. The Armour Research Foundation was requested to conduct this analysis and to design a program for attaining this economic potential. This program, which may be called a plan of action, is to serve as a base and guide for the future activities of the Department.

The analysis was quite thorough. Staff members of the Armour Research Foundation personally interviewed many persons within the State to gain firsthand knowledge of their present activities and future plans. In addition to meetings with city and community officials, the staff surveyed representatives of various industrial and commercial activities. The results of this survey were supplemented with statistical analysis to gain further appreciation of the trends within the State and in the Northeast. Conferences were also held with staff specialists at the Armour Research Foundation, and with various groups in the Federal Government and in diverse private enterprises who are active in state and community development functions. In this manner, all likely sources of pertinent information were reviewed to formulate a program tailored to the requirements of the State of Maine.

This final report is presented in five volumes. This volume, the Summary, contains a brief compendium of the whole report. Included are the results of the survey of the State, its communities and the major

industry, the analysis of potential growth activities for the State, and the program - plan of action - for the State, Communities, and the Department of Economic Development. The remaining volumes are the following:

Volume Two - An Appraisal of the State's Assets and Limitations

Volume Three - Evaluation of Present Industry

Volume Four - Economic Activities With Growth Potential for Maine

Volume Five - Conclusions and Recommendations

CHAPTER TWO
A LOOK AT MAINE -
AN APPRAISAL



A LOOK AT MAINE - AN APPRAISAL

The State of Maine has potential that can be developed. The State possesses many favorable features. A realistic appraisal reveals that these various features can add measurably to growth in the future, and, in some cases, can effect new economic activity. But to attain the maximum potential, some of the present shortcomings, those which can be humanly controlled, must be corrected and changed into assets.

This chapter covers the results of the survey and analysis of the features in the State which would tend to influence economic activity in the future. The various assets the State has to offer are reviewed together with the liabilities. Again, it is emphasized that in some cases present liabilities can be overcome and thereby changed into features which could enhance economic development in the State.

I. MAINE HAS IMPORTANT ASSETS THAT CAN FORM THE BASE FOR ECONOMIC DEVELOPMENT:

- . LABOR SUPPLY AND COSTS
- . RAW MATERIALS - FORESTS, MINERAL RESOURCES AND THE SEA
- . CLIMATE AND LIVING CONDITIONS
- . WATER SUPPLY
- . COMMUNITY ATTITUDE
- . TAXES
- . PROXIMITY TO LARGE EASTERN MARKETS

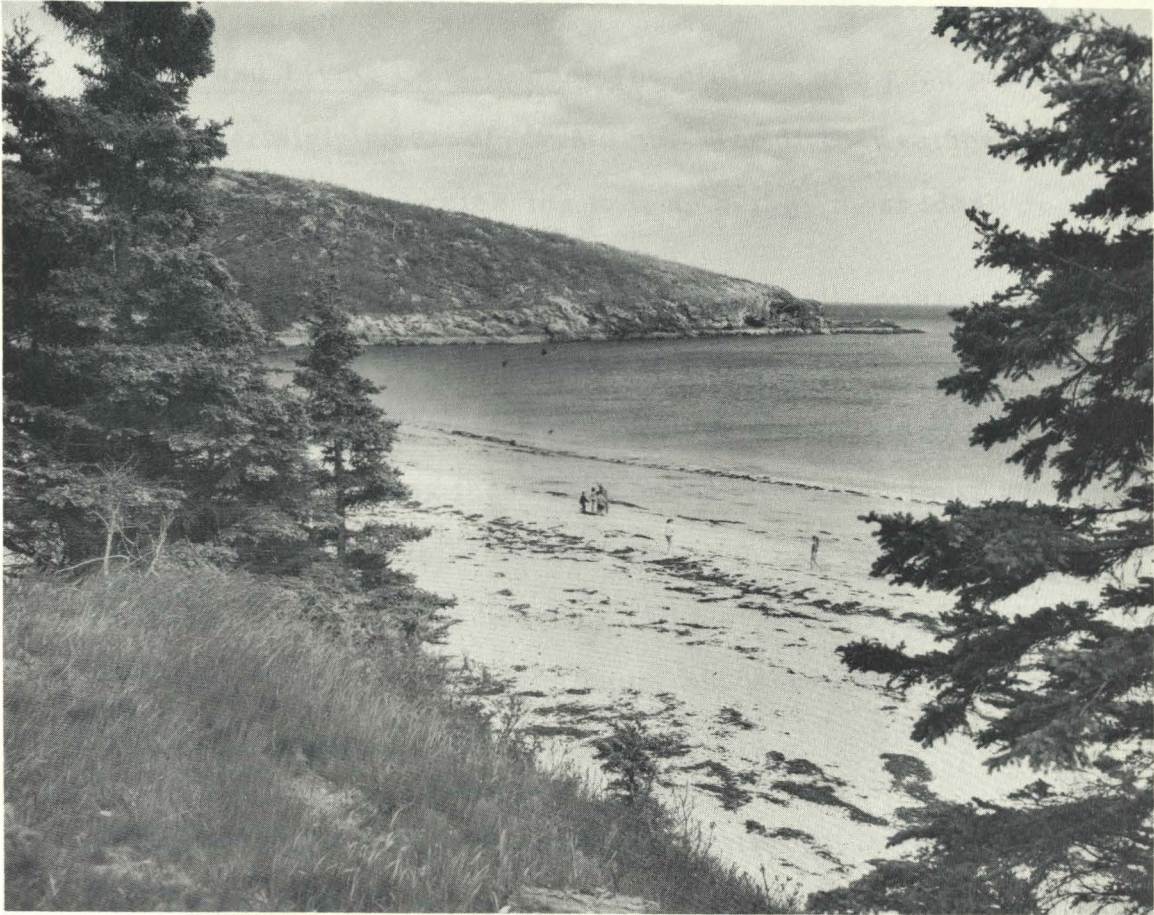
The assets Maine presently has can lend a firm base to the economic development of the State. Each of these assets is briefly

reviewed below:

Labor Supply and Costs - Maine's working force is one of its major assets. Workers in the State are generally of high quality in terms of productivity and adaptability to new work. Other points in favor of the Maine working force include its general availability, willingness to commute, an excellent history of labor-management relations, and the moderate wage levels generally prevalent throughout the State as compared to other states in the Northeast. The major drawback of the Maine working force is its lack of skills. It is particularly unfortunate that Maine's young workers do not have an extensive opportunity to acquire these skills in either high school vocational programs or on-the-job experience. This is felt to be an influencing factor both in the high rate of high school drop-outs in Maine and in the general exodus of young people from the State.

Raw Materials - Forests, Mineral Resources and the Sea - That this factor is considered a net asset for Maine is largely due to the present contribution forestry makes to the State's economy, and to the opportunity that exists for a greater return through more intensive forestation practices. A limitation is the limited degree of renewal of pine and birch presently practiced in the State.

The State's mineral resource is almost wholly a potential rather than a present asset. Present mineral production provides less than 1% of the State's manufactured product, and only 0.7% of the total mineral production of the United States. There are suspected reserves of



certain minerals in the State which could benefit future industrial expansion. However, Maine has only recently stimulated exploration programs to locate and identify these reserves. At present, there is no satisfactory picture of what mineral wealth the State possesses.

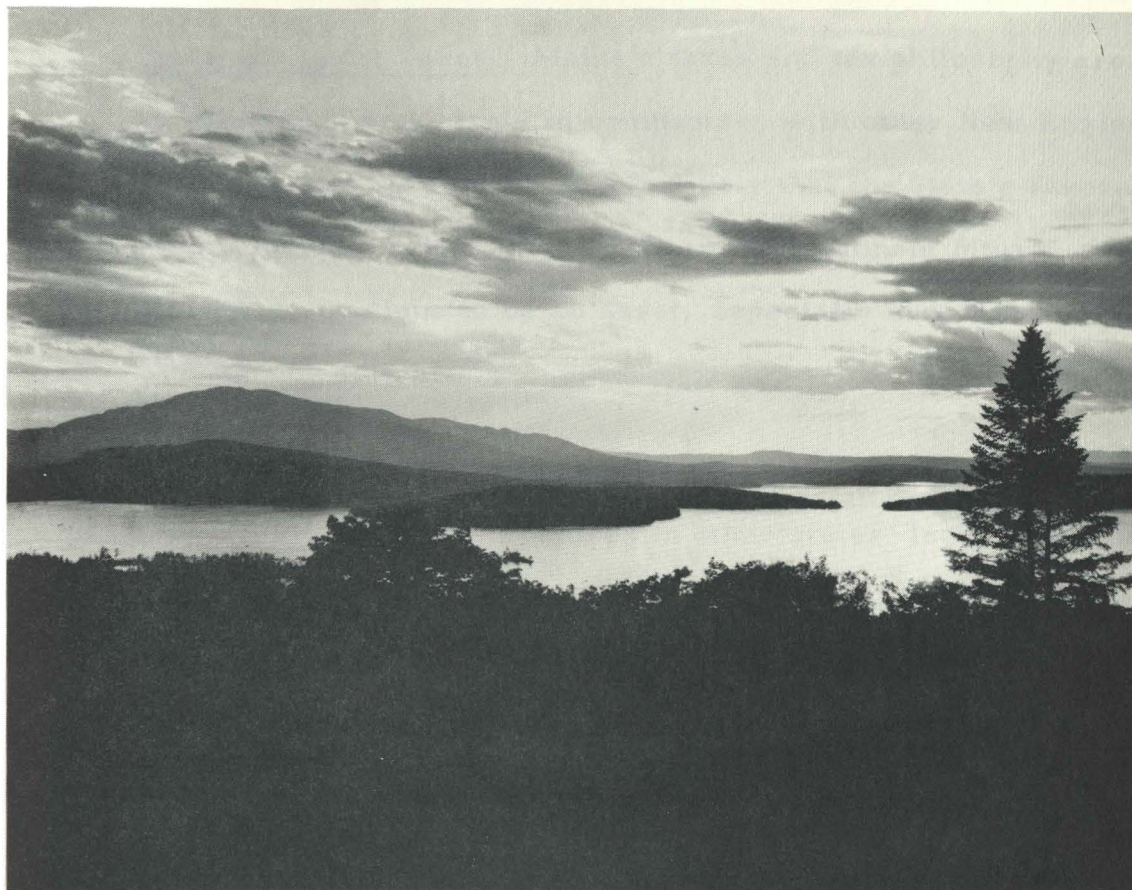
Sealife might well be considered Maine's third source of raw material, since it is analagous to the other two in that it is readily available for economic utilization, and requires only harvesting, so to speak. Maine's fisheries industry, especially lobster, makes the sea an important source of raw material, and one that can expand in the future.

Climate and Living Conditions - The climate of a good portion of the State is certainly an asset for Maine. The U.S. weather bureau has acknowledged this by referring to it as being "most ideal".

Unfortunately, the climate of Maine is generally misrepresented outside the State, particularly regarding the rigors of Maine winters. This has hurt the State. And as strange as it may seem, Mainers themselves are guilty of spreading these misconceptions about their winters. In some cases they actually believe their winters are extraordinary - in other cases they may be boasting. Whatever the reason, the impression that many Mainers themselves have, and pass on to outsiders, is detrimental to the development of their State.

Living conditions within the State are distinctly favorable. Cultural activities are weak, but Boston is only about two hours away from Southwestern Maine by auto or rail. The secondary educational system in Maine appears to be weaker than the national norm, but it is understood to be improving, largely due to new legislation. Housing is plentiful, and the State's recreational facilities superb.

Water Supply - One of Maine's most important assets is its abundant water reserves. New England as a whole is well supplied with water, and Maine is particularly well endowed with it. Four major river basins lie wholly within the State, and portions of three other basins are shared with neighboring areas. It is reported that the water supply in the region is more than adequate for the next fifty years.



Maine's most serious water problem is pollution. One pollution expert feels that despite the superior reserves of water which the State has, the effect of significant water pollution leaves Maine no better off for water than her New England neighbors. Stronger legislation to control pollution might well be considered by the State.

Community Attitude - Generally speaking, the attitude of Maine's communities is favorable to new business. In the course of the survey work, many examples of community action were found which indicated that the populace was receptive to and desired new economic programs and developments. It is important for them to communicate this favorable attitude to industrial prospects by contact and promotional activities.

State and Local Taxes - Maine's taxes and tax philosophy are favorable to industry, particularly in comparison with other New England states. As far as can be learned, it is unlikely that the State's favorable tax structure will change appreciably in the imminent future, and it should, therefore, continue to be an asset, especially in direct comparison with nearby states.

At the local level, property taxes throughout the State are definitely competitive with tax structures in other states' local communities. The major tax problem at the community level is inconsistency in tax assessment procedures. Fair tax assessment can be an important influence in plant location; communities in which a manufacturer feels he is "picking up the tab" for the whole town, do not attract industry.

II. THE FOLLOWING LIMITATIONS COULD AFFECT MAINE'S FUTURE ECONOMIC DEVELOPMENT:

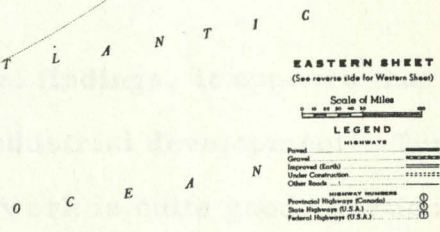
LOCATION
BUILDINGS AND SITES
TRANSPORTATION
POWER AND FUEL
LEGISLATIVE PROGRAMS AND
ATTITUDE OF GOVERNMENT
FINANCE

The deficiencies that Maine presently experiences include factors that are quite important to economic development. In many cases, these limitations can be corrected or, at least, their effect can be minimized. Each of the limitations is briefly covered in the following discussion:

Location - Maine's location in relation to national markets is one of the most apparent limitations. The huge development of the Mid-

ant, this growth has resulted in severe
cturing activities in the Northeast which

With the exception of



Canada, these primary market areas are expected to show a moderate growth trend in the future. Canada is growing rapidly and may possibly exceed the growth rate of the Northeastern region of the United States. Maine is particularly well situated to serve Eastern Canada, should

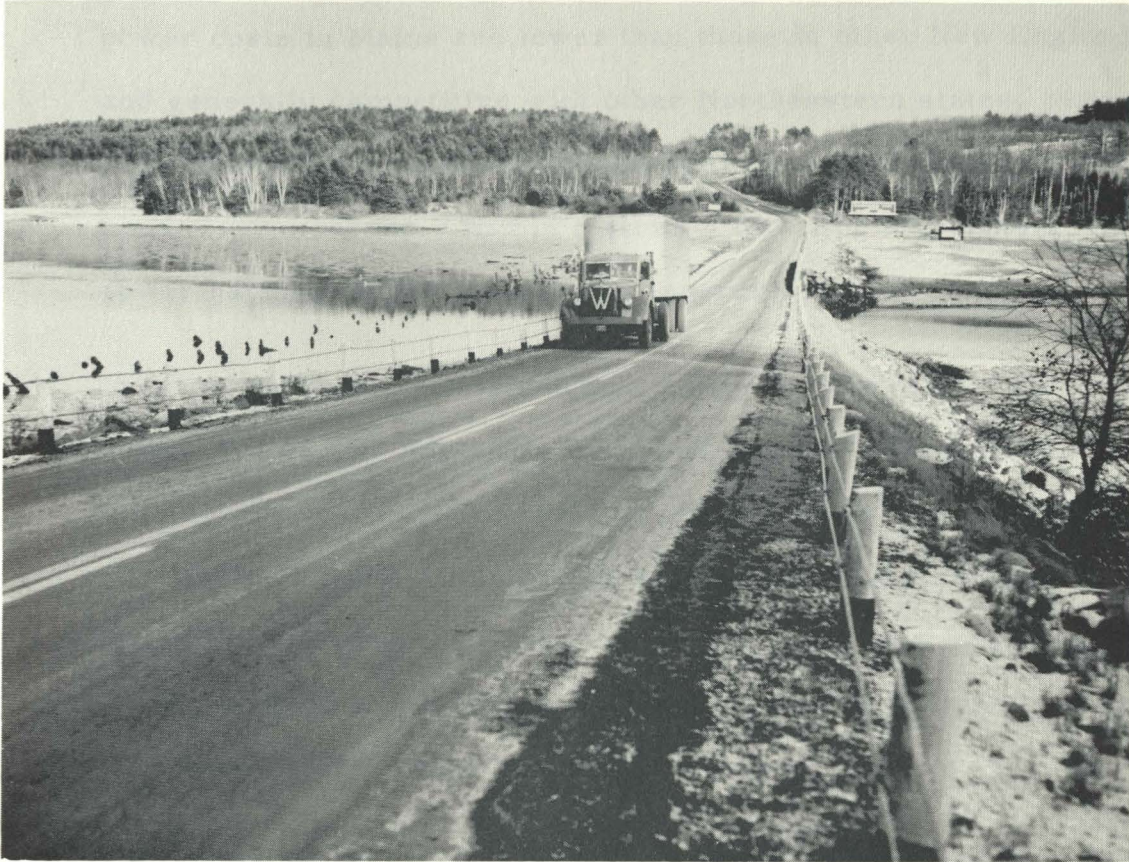
this area enjoy substantial growth.

Buildings and Sites - The State can offer available manufacturing space, but this is very largely in the form of old, multi-story buildings which are not readily adapted to general purpose manufacturing. Local Maine communities have concentrated on filling up empty buildings; this, while justified in the short term, is not realistic to contemporary manufacturing needs. Some Maine communities are belatedly attempting to meet these needs through construction of speculative buildings.

Warehouse space is generally considered sufficient throughout the State for current needs. Some cities are deficient in storage capacity and in the loading and unloading facilities required for expedient handling of materials.

Maine has ample raw building sites available for industry, but in this the State does not differ from other neighboring states. The availability of improved land in the form of industrial districts or industrial parks is limited throughout the State.

Transportation - On the basis of general findings, it appears that the State's transportation networks limit industrial development. The picture is mixed. Maine's highway network is quite good, particularly in view of the State's relatively small population. It is, however, strongest in the Southwestern section of the State and is generally not much improved North and East of Augusta.



Rail and air passenger service to the State from nearby economic centers is weak. The need for frequent travel between major market centers and plants located in the State makes this a distinct disadvantage.

Maine seaports and water transportations, while presently limited in usage, might be considered a potential asset if more interest could be generated in this means of transportation. This could be especially important if activity in foreign products, import of raw materials and some finished products, would be generated.

Power and Fuel - Cost of power and fuel throughout the entire New England region is higher than the average for the country. Although

power costs in Maine are lower than those in other New England states and generally competitive with other Northeastern states, Maine's power rates must be rated as a limitation, especially where national markets are served. Within a strictly New England context, however, power rates in Maine are slightly favorable.

No such mitigating factor can be claimed for the cost of fuel in the State. All of New England's fuel, both coal and oil, must be imported into the region. Because residual oil is shipped by water from the Caribbean or South America, its landed cost at Maine ports is no higher than at other New England ports. Coal, which is supplied from middle atlantic and southern sources, is generally higher in Maine than in more accessible New England areas.

Legislative Programs and Attitude of Government - Traditionally, Maine's legislative programs have been friendly to industry. The State's tax policies are favorable to industrial development; however, the State is apparently reluctant to provide for industry's needs of the future. The difficulty of the University of Maine in securing funds for growth and development, and the lack of adequate vocational training facilities throughout the State are major evidences of this reluctance.

In the long range, a scarcity of trained personnel and facilities hampers industrial growth. Unless this situation is corrected, Maine will suffer in the future.

Financial Assistance - Although Maine has developed new means by which industry can secure financial assistance, the older and traditional

private financial institutions in the State are still relatively conservative in comparison to those in other parts of the Northeast. For this reason venture capital is difficult to obtain. Although venture capital is tight, public and some newer private financial organizations are having a liberalizing effect on financial thinking in Maine, as is an influx of younger people in banking circles in the larger communities. At present, the decided conservative cast to Maine banking is a limitation for the State's industrial expansion.

* * * *

This chapter has presented an evaluation of some of the more important resources, facilities and capabilities of the State that have a bearing on future economic development in Maine.

CHAPTER THREE

MAINE'S POTENTIAL FOR ECONOMIC GROWTH

There is every evidence that during the next decade America will experience considerable growth in population and income; New England will share in this growth, and will surpass certain other regions in population increase.

Since the anticipated expansion of New England will tend to be greater in the southern part than in the northern part of the region, a challenge is thrown open to Maine. The State must strive to increase its relative share of this growth, to minimize its loss of capable young people, and to enhance the standard of living of all its population.

This chapter first presents a broad picture of the New England Economy in 1970. Next, it covers Maine's potential for economic growth first appraising its present five major industries. The succeeding chapter reviews some new economic possibilities for future exploitation.

- I. BY 1970, NEW ENGLAND'S POPULATION IS EXPECTED TO INCREASE BY 10% . . . ITS PERSONAL INCOME BY 28%

A population increase of slightly over one million is expected for New England in the sixties; this will be the largest gain in any decade of the region's history. New England is expected to add 17 persons per square mile in the next decade, as against 11 for the nation as a whole. The density of population by 1970, therefore, will

likely be 180 persons per square mile in New England, as compared to 72 for the nation as a whole.

Personal income will be increasing. In terms of real income, which discounts the effect of inflation, total personal income in New England is expected to increase by \$7 billion, 21% over the present level. Allowing for the increase in population, income per person is expected to rise by \$495 from 1957 to 1970. This increase is a gain of 21% for the region, as compared to a national anticipated rise of about 23%.

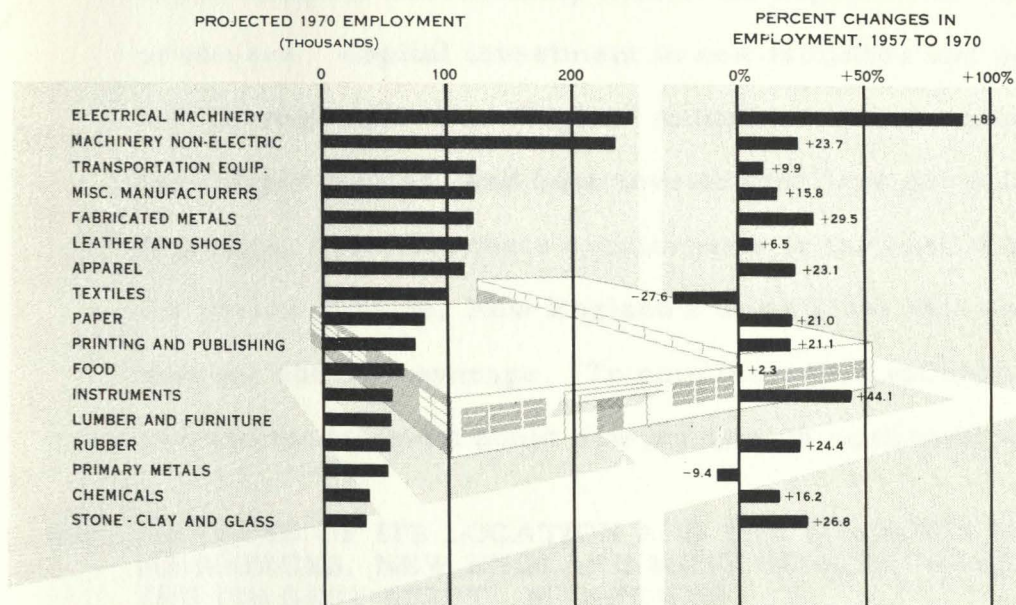
Discretionary income will rise significantly; it will increase by a percentage higher than the 21% rise in income per person. "Discretionary" income is money available after satisfying the basic requirements for clothing, food, and housing. It generally is spent for luxury or semi-luxury items such as additional appliances, recreation equipment, vacations, a second car, and so forth. This creates a host of new "industry" recreation possibilities.

The effect of this over-all growth will be to create expansion opportunities in many industries, in education, and in recreation. The chart on the following page shows the possible composition of manufacturing employment in various industries in 1970, with comparison to that in 1957.

But such growth will not come by itself. It must be nurtured; otherwise, industrial competition from other regions and from foreign countries will take its toll, and may cause migration from

New England.

NEW ENGLAND MANUFACTURING EMPLOYMENT



SOURCE: FEDERAL RESERVE BANK OF BOSTON

II. TO ATTAIN THE ESTIMATED POTENTIAL THAT EXISTS FOR NEW ENGLAND, MORE EMPLOYMENT OPPORTUNITIES MUST BE CREATED AND MANUFACTURING MUST BECOME MORE EFFICIENT

The Federal Reserve Bank of Boston has estimated that over 421,000 new jobs must be provided in New England to accommodate the expected population rise. Manufacturing activities will be the largest employer in this period and they, therefore, will be required to provide most of this needed increase.

New England manufacturers will have to compete more and more in national markets - at least in the market east of the Mississippi. This will be challenging, since traditionally New England has serviced the area adjacent to it, and since the cost of transporting goods from New England to these other markets presents a problem.

Efficiency must be increased if manufacturers in New England are to compete successfully with other regions and with foreign producers. Capital investment in new facilities and new machinery will be required. New England manufacturers have used far less capital per worker, and have invested far less per worker in capital facilities, than have their counterparts in the rest of the nation. In the period 1954-56, New England's investment rate was 40% slower than the national average. To gain increased efficiency, New England manufacturers must adopt new production equipment and techniques.

III. BECAUSE OF ITS LOCATION AND THE SCARCITY OF NATURAL RESOURCES, NEW ENGLAND MUST CONCENTRATE ON DEVELOPING ITS BEST ASSET: MANPOWER

In one way, New England's lack of extensive natural resources is cause for mourning; in another way it might become a blessing. It forces a condition upon the region that can help to make it a very desirable area for its population in the future. This condition is that the greatest asset that the region possesses - manpower - be made more valuable. The way to do this is by increasing the skills of the work force, not only in the trades, but more important, in the professional areas of research and development.

For a moment, envision the structure of a region highly oriented in skilled activities. The populace would be better educated, better paid, than that of most other regions. The rise in discretionary income would be large, since the higher wage and salary rates would permit considerably more expenditures on "luxury" items and activities.

More families would have better housing, more appliances, newer cars; they would enjoy the added leisure and pleasures that enhance living.

Perhaps it is fortunate to be forced in such a position by competitive pressures. For either the region will flourish or it will degenerate. Yankee determination can make New England a growing, thriving area.

IV. MAINE CAN BECOME A MORE INTEGRAL PART OF THE NEW ENGLAND COMPLEX AND SHOULD PLAN TO INCREASE ITS GROWTH POTENTIAL

Forecasts permit some insight of what will likely result from a given set of conditions. In New England for example, it is seen that Maine will grow - in some cases more than some of its neighbors, in other cases less.

POPULATION OF NEW ENGLAND (In Thousands)

	<u>1960</u>	<u>1970</u>
New England	10, 322	11, 380
Maine	953	1, 018
New Hampshire	592	655
Vermont	376	404
Massachusetts	5, 147	5, 595
Rhode Island	871	943
Connecticut	2, 383	2, 766

SOURCE: Federal Reserve Bank of Boston

This chart points out the relatively low population increase in Maine as compared to the other states in New England. Actually, these figures reflect the anticipated migration of New Englanders from the northern to the southern part of the region. The Federal Reserve Report* mentions that, "Most New Englanders will seek to live in Massachusetts, Rhode Island, and Connecticut" and goes on to say that, ". . . over three-quarters of the population growth will occur in these southern states." The reason for this shift is attributed to, ". . . the pull of job opportunities primarily setting the pace of the differing state growth rates."

Maine must decide whether it will accept this situation or whether it will attempt to change it. Since the forecasts are predicated on a given set of conditions, changing the conditions. . . in this case, increasing Maine's aggressiveness in economic development . . . can change the results. It has been done before . . . and Maine can do it too.

Maine can play a bigger role in New England's economy, if it plans for and aggressively promotes economic expansion on all fronts. This means actively cultivating its present industry, introducing new economic activities, and effectively soliciting new industry from outside the State.

* Federal Reserve Bank of Boston - Annual Report, 1959

EVALUATION OF MAINE'S PRESENT INDUSTRY

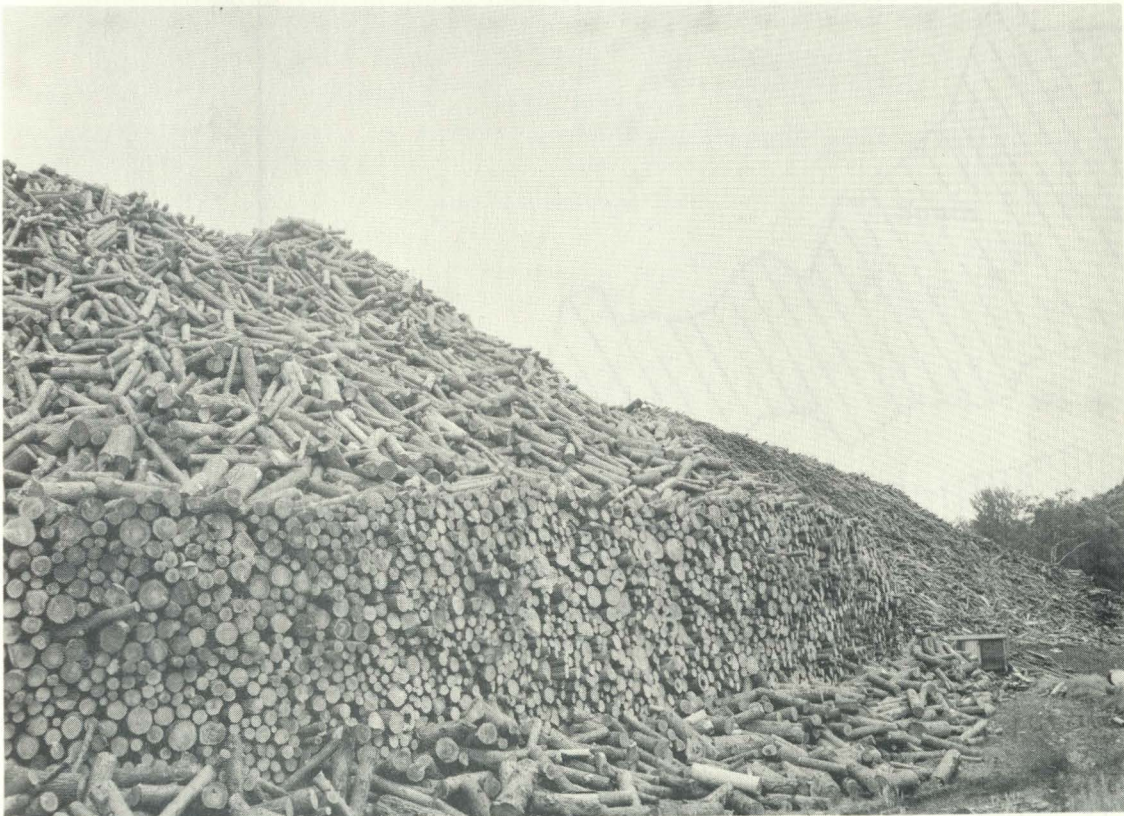
In looking at Maine's potential for the future, one of the most important considerations is the expectations of its present industry for these will have the greatest impact on the State in the next few years and can be instrumental in directing some of its long-term trends. Through the encouragement of growth in present industries, an effective base can also be laid for attracting other economic activities in the future.

Accordingly, the five major industries in the State were surveyed to learn of their present operating activity within the State, and more important, to determine their future plans. The survey results are presented in the following sequence: Pulp and Paper, Lumber and Woodworking, Food Products, Agriculture and Fisheries, Leather Products, and Textiles.

V. PULP AND PAPER

THE PULP AND PAPER INDUSTRY IN MAINE IS STRONG AND IS EXPECTED TO INCREASE ITS OUTPUT MODERATELY OVER THE NEXT TEN YEARS

The pulp and paper industry's production in Maine has comprised the largest portion of the State's manufactured product. In recent years, it has been increasing; contributing 21.9% of the State's total manufactured product in 1952, it grew to 27.7% in 1958. A good

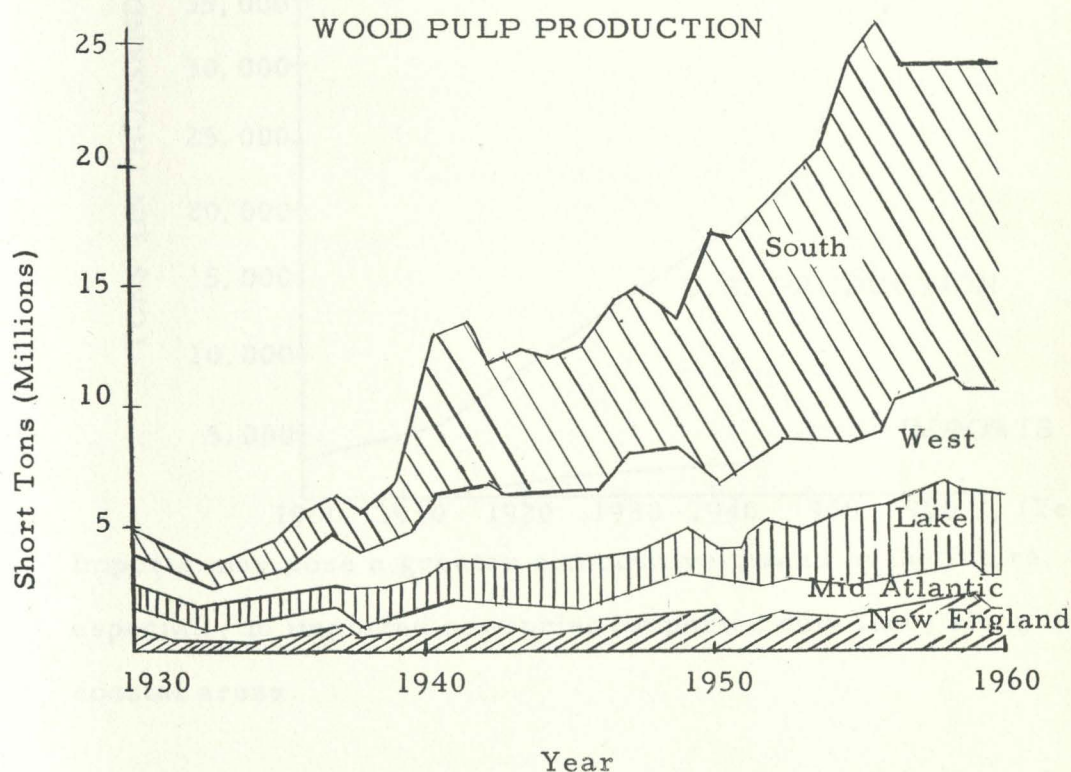


portion of the credit for this increase is due to the aggressiveness of the industry's management, both in meeting competition with increased efficiency and with product diversification. Future expansion of significant proportions, however, is dependent on increasing the supply

of pulpwood and on expanding the specific types of products produced in the State.

1. While the Industry is Growing Nationally, It has Remained Fairly Stable in the Northeast

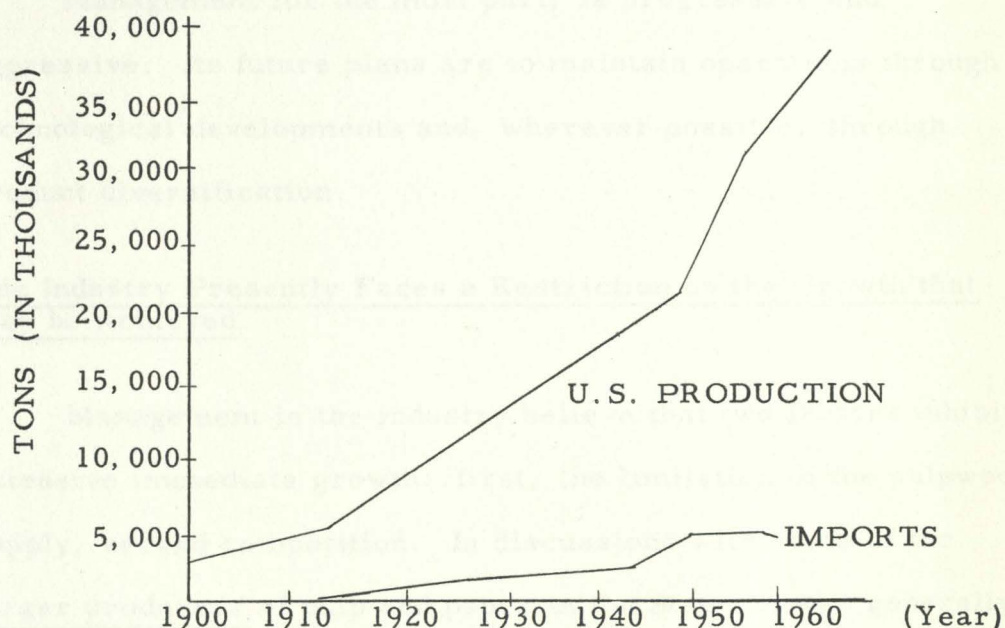
Looking first at the pulpwood part of the industry, we find that a significant growth has been experienced, as shown in the following chart.



Much of this expansion, however, has been achieved by increased production in the South, and more recently in the West. New England pulp production has remained virtually constant over the last thirty years.

In paper and paperboard, total United States new supply also has shown a significant growth, especially in the last two decades. While imports have increased, by far the largest portion of the new supply has resulted from domestic production as shown in the chart below.

UNITED STATES SUPPLY OF PAPER AND PAPERBOARD



Imports may pose a greater competitive thread in the future, especially in imported newsprint (imported duty free) along the coastal areas.

Maine's part in the current Northeastern production of paper and paperboard as compared to other nearby states is favorable; this is due to the State's large inventory of trees and forest land. Maine accounts for about 20% of the region's total production. The State's production is mainly in paper; only a negligible amount of paperboard is produced.

2. Operating Conditions in the State are Favorable: Management is Aggressive.

The paper companies have generally expressed satisfaction with operating conditions in the State. Labor is productive, taxes are realistic, and transportation is satisfactory.

Management for the most part, is progressive and aggressive. Its future plans are to maintain operations through technological developments and, wherever possible, through product diversification.

3. The Industry Presently Faces a Restriction on the Growth that May be Achieved.

Management in the industry believe that two factors inhibit extensive immediate growth: first, the limitation of the pulpwood supply, second competition. In discussions with some of the larger producers of pulp and paper in the State, it was generally estimated that, on a sustained yield basis, the supply of pulpwood would only reasonably permit approximately a 10% increase in industry capacity. This relates only to the volume of basic pulp production and not to the industry's volume where a diversification in the end use might be attained. (State foresters believe that data that is being developed by the U.S. Forest Service, based on a new study on Maine's forest reserves, will indicate that a larger potential exists than previously has been estimated).

Competition stems from two primary sources, the South and foreign countries. Newsprint is particularly vulnerable

since Southern production has increased substantially, while somewhat inferior to the newsprint made in the North, it is satisfactorially being used. Foreign competition, mainly from the Scandanavian countries, is also likely to increase. New production facilities there permit the production of quality paper at low cost. Then too, the lack of import duty on newsprint permits the lower cost Scandanavian papers to be competitive especially along coastal areas.

4. Expansion Opportunities Center Around Specialty Papers, Other Paper Products, and Light Weight Board.

Product diversification into specialty papers is perhaps one of the foremost means for the industry to expand its volume in the State. The paper industry is firm in its conviction that paper produced from Northern pulpwood is superior to the South's product. This, then, appears to offer Maine's producers a distinct advantage and one they might well use to increase volume.

Other paper type products could also lend themselves to production in Maine. Some examples are clothing, water coolers, disposable gloves, and so forth. A lightweight board of honeycomb construction might also prove feasible. A study on the feasibility of producing chip-board is being proposed by the State's Department of Economic Development and the Forestry Division.

5. The Future Program of the Industry Should Center About Product Research and Forest Management.

One of the foremost needs of the industry is to develop new pulp and paper products; more research along these lines is warranted. One suggestion for product development is the lightweight construction board mentioned on the preceding page. Other products such as clothing could also be developed by a suitable research center which could be sponsored by either the State or jointly by the forestry industries in Maine.

Forestry management should be intensified in two areas: first, species important for lumber and woodworking, birch and pine, should be replenished; second, the production of present forest lands should be intensified. As a first step to this program, it is suggested that an economic study on forestry practices be considered; this study can be conducted with the cooperation of the regional office of the U.S. Forest Service and can likely follow the pattern of the study currently being completed by the Lake States regional office of the U.S. Forest Service. Such a study should form the basis for the most profitable approach to tree growing and harvesting in the State. It would be beneficial to have the owners of large forest tracts in the State participate in such a program.

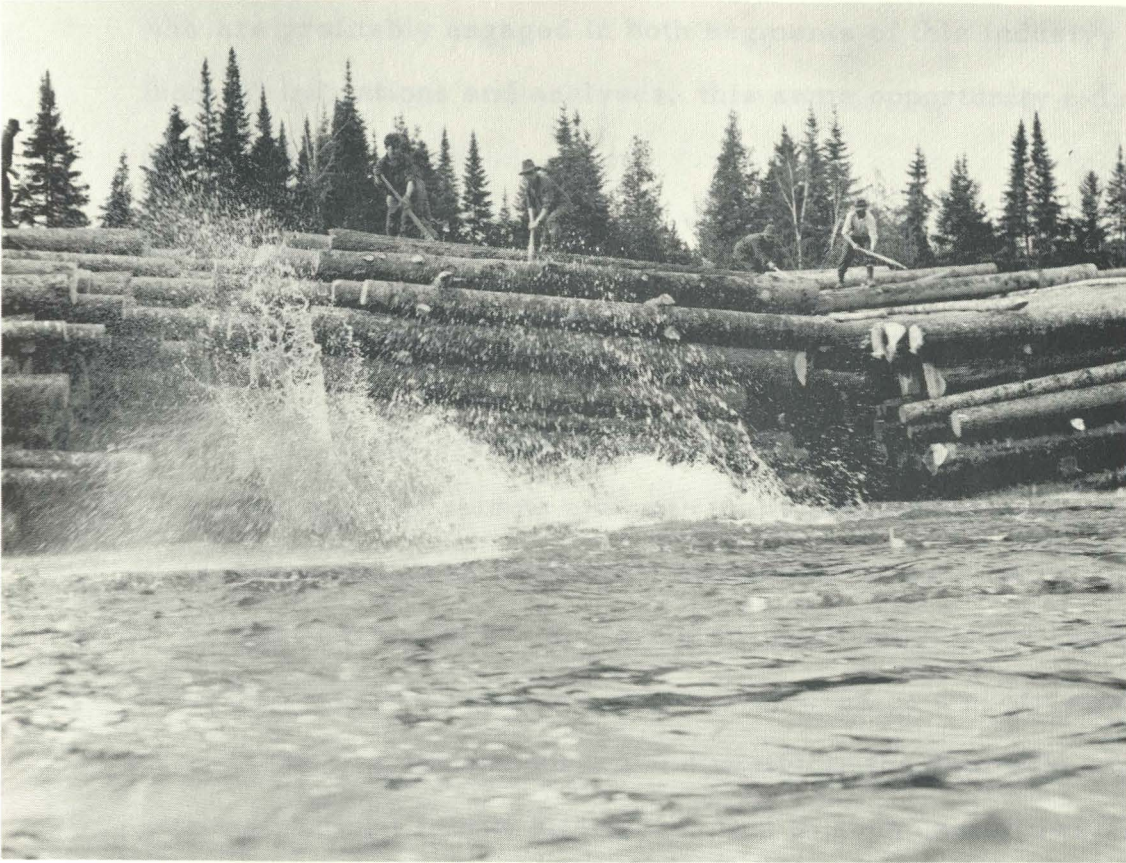
To encourage the growth of trees, it may be worthwhile to review the tax structure on forest lands. It is suggested that a study be made on this subject, considering in particular,

inducements that would enhance growing trees to their economic maturity. The program developed by New Hampshire, wherein taxes are assessed on timber harvested, seems worth looking into.

LUMBER AND WOODWORKING

LUMBER AND WOODWORKING INDUSTRIES OF A SIGNIFICANT POTENTIAL FOR DEVELOPMENT IN MAINE

Maine's lumber and woodworking industries show good promise for development. In lumber, an opportunity exists to increase substantially the amount of work performed on lumber there before it is shipped outside the State, thus increasing the value of product. Woodworking offers an exceedingly good opportunity to increase the value added in the State by utilizing modern equipment and practice aggressive marketing techniques to develop higher and more diverse markets. Many excellent examples of progressive companies



VI. LUMBER AND WOODWORKING

THE LUMBER AND WOODWORKING INDUSTRIES OFFER SIGNIFICANT POTENTIAL FOR DEVELOPMENT IN MAINE

Maine's lumber and woodworking industries show good promise for future development. In lumber, an opportunity exists to increase considerably the amount of work performed on lumber items before they are shipped outside the State, thus increasing the value of product shipped. Woodworking offers an exceedingly good opportunity to producers who utilize modern equipment and practice aggressive management techniques to develop larger and more lucrative markets. The survey team found excellent examples of progressive companies

who are profitably engaged in both segments of this industry in Maine; from all indications and analyses, this same opportunity exists for others also.

1. Lumber

In the Lumber Segment of the Industry in Maine, A Trend May Develop Toward Larger Operations

At the present time, the lumber industry in Maine is faced with many problems and with many small producers. In numerous cases, lack of suitable equipment by the small producers has resulted in a lower grade product which has a limited market. The industry, in being competitive, creates a profit squeeze on these smaller producers and restricts the available funds for investment in new facilities. Due to such capital restrictions, the operations also tend to be marginal, operating only in favorable periods.

The industry in Maine has also characteristically been restrictive in the degree of work performed on lumber; the small operators generally sell only rough lumber stock, the larger operators in some cases go a step further in dressing the material and in producing paneling. However, extensive milling operations, moulding productions, and custom cutting are not done. This limited amount of work has tended again to restrict the value of product shipped by these producers and thus restrict their revenue.

Larger operators for the most part, are in a relatively favorable position. They have better equipment to produce a higher grade product. They are more sales conscious and devote more effort to marketing. Their capital position gives them more latitude in production and forward planning programs. They are looking at new products and markets.

It appears likely, therefore, that the larger operators will continue to develop a trend toward expansion within the State while the smaller marginal operator will be forced to restrict operations.

2. The Lumber Industry Generally is Encountering Problems in the Availability of Timber, in Management Capability, and in Cost Control.

Of the major problems which beset the industry, the one with the longest range consequence is the availability of suitable timber. Where stands of large trees once dominated the State, today only small trees are found, a characteristic of much of the nation's forests. This smaller stock, in birch and white pine particularly, results in a lower grade product, one characterized by many more defects than would result from more mature and larger timber.

Another problem the industry faces lies in the area of management capability. Especially in the smaller operations, as well as in some of the medium size ones, the management personnel require more technical and marketing know-how. In

the technical areas they are not familiar with new production techniques in manufacturing lumber and in millwork operations; in the management area itself they require more knowledge of marketing and production control to handle the competitive situation profitably. The smaller operations in particular are hampered by a lack of sufficient capital and productive volume to support product development and a sales force which would serve to expand their market volume.

A related problem area, cost control, is identified separately since it is one item typically lacking in the industry's operations in Maine. Producers do not keep cost records and thus are not aware of the costs of various items they produce. Only at the end of a fiscal period do they find whether operations have been profitable.

3. To Utilize the Opportunity That Exists for Growth, the Following Should be Considered by the Lumber Industry:

Improve Quality of Production
More Processing of Products
Increase Cost Control
Local Organization of Producers

To enhance long term profitability, the product will have to be of better quality. This will require newer equipment and the utilization of new techniques such as electronic glueing, splicing, kiln drying, etc. By increasing quality, Maine's producers will be in a better negotiating position in marketing their lumber.

It would be of distinct advantage to increase the amount of work done on lumber items before they are shipped out. Thus custom work in milling, cutting, mouldings, etc. would greatly increase the return from the same basic product and tend also to enhance profits.

Management could help itself measurably by becoming more knowledgeable in the techniques of marketing, production control, cost control, finance, and so on. Without such a background, it is extremely difficult to meet the competition's ability, much less to grow and expand operations.

It is also suggested that lumber producers be encouraged to form a local organization. This organization could serve the purpose of:

- (1) disseminating production, management and market information, and
- (2) provide for research activities.

Most producers in the State are too small to do these functions independently; jointly, they could support such activity.

4. Woodworking

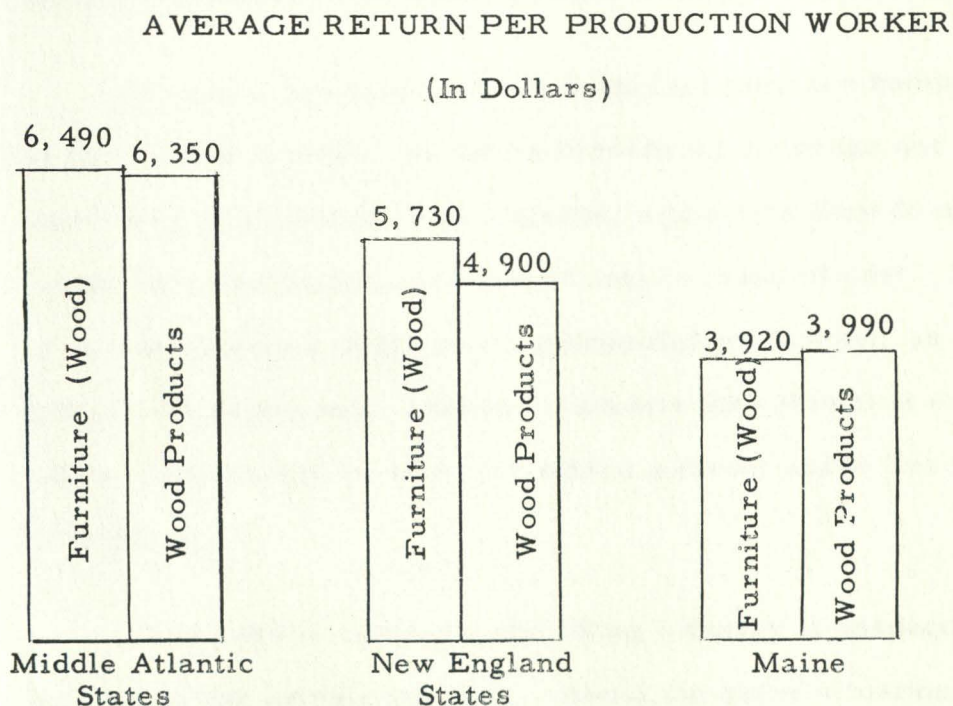
While Firms in Maine's Woodworking Industry are Generally Old and Small, Some Progressive Concerns Exist

Maine holds a favorable position in the Northeast's woodworking industry. In its major product line, which falls under the SIC category of Miscellaneous Wood Products, Maine ranks

third in production in the Northeast. In wood furniture, however, Maine is very low in production.

The industry is characterized by many small producers who generally specialize in a few products. Their buildings and equipment are generally old, though well maintained. Much of their machinery is of a specialized type. Competition is keen in many of the lines now produced.

Typically, low value products which result in low returns per production worker are manufactured. Some examples of these are dowels, spools, toothpicks, throat depressors, etc. The chart below shows the return per production worker in woodworking, broken down into its two component categories: furniture and wood products. The average return per production



worker in Maine is seen to be considerably below the average for both the New England and the Middle Atlantic states. This chart also points out return which may be secured from furniture production, a higher value type of product. Thus, it would behoove the industry in Maine to consider higher value products in furniture as well as in other items in order to increase its volume and related profit margin per worker.

5. The Woodworking Industry in Maine has Three Main Problems Restricting its Growth:

Limited Marketing Activity
Lack of Cost Control
Little Self Motivation

That the woodworking industry can be profitable in Maine is exemplified by the fact that some producers in the State have shipped as far as the West Coast. These have developed a well designed product, reasonably priced, and well marketed.

Too many producers in the State feel they are hampered in their sales activity, as far as increasing coverage and volume, since they deal through sales agents, a practice they do not relish but nevertheless are forced into because of cost. Some of the experiences of the more successful operations, as previously mentioned, however, indicate that selective sales representation can be effective where a direct sales force is prohibitive.

Cost control in the woodworking industry is inadequate -- as it is in the lumber industry. About the same situation exists;

little or no cost records are maintained, and only the fiscal reports define the profitability of operations. This is one reason why producers do not become more involved in custom work; they just are not aware of its profitability.

The most important problem facing the industry is a difficult one to deal with: its lack of motivation. Little interest in expanding operations was found in producers in this industry. In some cases when expansion would be most feasible and profitable, the owners were satisfied with their operations as they presently exist and had no desire to increase them. Some exceptions do exist. A few concerns were surveyed where expansion and growth were being planned; the management of these firms appeared aggressive and resourceful. In this industry, however, it was found that such persons were in the vast minority.

6. Opportunity for Expansion is Possible Through:

Upgrading Products
Improved Market Techniques
Increased Management Control

Profitable growth can be achieved in the woodworking industry in Maine. To attain it, the industry should look to the production of higher value items such as block flooring, skiis, inlaid veneers, carvings, boat components, and so on. Furniture presents a distinct opportunity for a well designed medium priced line. In the development of such products, professional

designers should be employed, and quality must be achieved.

Marketing should be given more consideration. Wherever possible, direct salesmen should be employed. If this is not feasible, the owner/operator should consider part-time selling as one of his main functions. Telephone calls and direct mail can admirably supplement a few personal calls made by him each year.

Management control needs attention. Cost control is one problem which is jeopardizing expansion in many companies. Another management area for improvement is in profit planning and in the use of capital - especially as it relates to the procurement of new facilities. It is likely that bankers could help in this latter area.

It would certainly assist the industry if seminars were held on management control and profit planning. In addition, a program for this industry should include an introduction into product diversification. It might also be worth considering the production of more completely finished product lines rather than ship only components out of the State as one part in the diversification program.

VII. FOOD PRODUCTS - AGRICULTURE AND FISHERIES

Food products in the State can be divided into those products which are agriculturally based and those which are products of the sea. The food products which are of major importance in Maine are poultry products (broilers and eggs), potatoes, dairy products and lobsters. Of secondary importance at the present time are fruit and vegetable crops and other sea products.

1. Broiler Production is Maine's Most Dynamic Food Products Industry - It Can Expand if Costs Can Be Controlled.

The last decade has witnessed a major growth of the broiler industry in Maine. Three factors were instrumental in



this growth: increased market demand, lower costs to consumers due to more efficient production techniques, and the suitability of Maine for broiler production. These factors have combined to make raising broilers in Maine a profitable operation.

- i. Through its processor-grower integration, the State's broiler producers have had an advantage in this competitive industry

An historic difference between the broiler industry in Maine and in other growing areas has been that of the integration of the industry. In Maine, most of the broiler operations are sponsored and supervised by processor-contractors who manage and retain ownership of the chicks throughout the growing period. The grower supplies buildings and labor for tending the chicks. In other areas, feed dealers own and supervise the growing of chicks. The integration of Maine's industry has had the advantage of the processor being more abreast of the market requirements and able to adjust to them more readily than would the feed dealer.

While Maine has had an advantage over other producing areas in the processor-grower integration, it still is faced with the problem common to the industry as a whole, that is, it has become extremely competitive, being characterized by many sellers and high production costs. At present, the broiler industry in the United States is

composed of some 400 selling units which sell to some 20 to 25 supermarket chains. No one selling unit within the industry, either in Maine or elsewhere, is sufficiently large to deal on equal economic terms with these large chains.

ii. High growing cost, due primarily to grain shipment, poses a problem

Cost of production is Maine's most serious problem. It primarily relates to the transportation of Midwest feed grain into the State. Other producing areas, notably the South and Middle Atlantic states, being closer to the Midwest grain growing area or being able to reduce transportation costs through water-borne shipment, have achieved a cost advantage over Maine's growers. These other areas, consequently, have a competitive advantage to the extent of approximately 0.6¢ per pound.

iii. To achieve growth in the broiler industry, the following actions must be considered:

- . Strengthen sales organization
- . Increase promotion
- . Lower grain costs

Stronger sales organizations are required to equalize the present disparity between buyer and seller. It might be possible to have either large feed manufacturers or meat packing organizations diversify into broiler processing.

More promotion to sell Maine's product is also required. Since Maine's broilers are of recognized quality, it may be entirely possible to develop a brand preference in the sense of a state product -- Maine broilers.

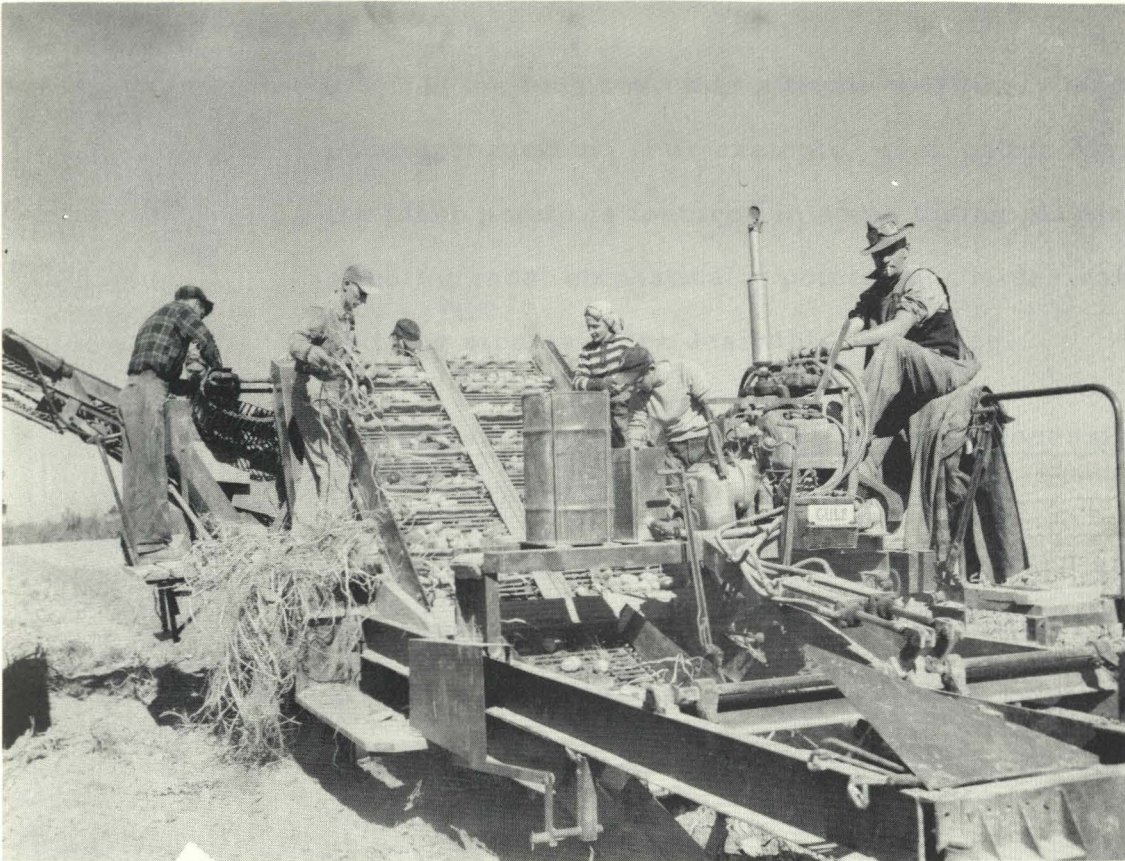
Cost of grain will likely present a problem unless transportation charges can be lowered. A number of possibilities present themselves: achievement of lower rail freight rates on grain, use of water transportation with grain storage in the State, combination water and truck cartage via Quebec, and the local raising of part of the grain requirements.

2. Maine's Potato Industry Can Experience Increased Volume if the Industry Becomes More Market Conscious.

Maine has an excellent area in Aroostook County for growing potatoes. This area is so ideally suited to this crop that almost any strain of potatoes can be grown. One result of this versatility of crop is that Maine has developed as the principle national source of potato seed.

i. The quality of Maine's potatoes for processing and eating should be upgraded

Maine potato growers have not attempted to develop a specific strain for table stock and processing; rather, they have concentrated on potatoes for seed. Seed type



potatoes are not easily utilized for table stock end processes; thus the quality of the Maine potato for this useage is considered less desirable than is the Idaho potato.

The farmer himself has had a natural resistance to upgrading his potato since, in many cases, he feels he can secure an adequate return on lower grade but higher yield. Maine processors, in addition, have appeared content to utilize the potatoes that are available and have not pressed for other species.

In the long run, this attitude will likely hurt Maine's potato production. For example, even within Maine itself, the Idaho potato is featured in some dining places. Such a situation most emphatically points out the desirability of growing strains more desirable for eating.

ii. The industry is faced with inertia in its processing and marketing activities

The lack of a close relationship between growers and processors is believed to be one main reason for a lag in growing more desirable strains. Closer relationships with processor in growing potatoes would likely achieve two advantages:

- (1) the processor could specify the strain most desirable for his products and
- (2) more stability could be imparted to the industry if contracts were affected for portions of the growers' crop.

Promotion of Maine's potatoes is not intensive enough to capture a larger share of the market. While part of the consumer preference for potatoes from other areas, namely the Idaho, is due to the reported higher quality, it also is due to the lead western growers have in potato promotion. The Idaho potato, unfortunately for Maine, has become almost a generic term. It can command

a premium price based on the promotional image of the desirability of Idaho potatoes. Maine's producers should strive to create a similiar favorable image of their product on consumers.

iii. Maine's potato industry can capture more of the market if:

- . Quality is improved
- . Processing is increased
- . Marketing is intensified

To increase its share of the market, Maine growers must regrade potato quality in terms of growing those species which are most desirable for table stock. With a more desirable product to sell, a larger share of the market, especially the growing Eastern and Midwestern market, could be captured.

In its endeavor to expand volume, the industry should also look to increased processing activities. At present those processed products for which market demand is established can be produced . . . items such as frozen french fries, potato flakes, etc. Other end uses for potatoes such as chemical processing or alcohol should also be studied for diversification opportunities.

On the marketing side, further development of grower cooperatives appears desirable to strengthen the grower's market position. Greater promotional effort might also be well directed toward creating a more favorable image of

Maine potatoes in the eyes of the consumer.

3. Maine's Dairy Industry is Expanding Gradually; the Future can be Optimistic.

Maine's dairy production is almost entirely in the fluid milk area rather than diversified through a range of manufactured dairy products such as cheese, ice cream mix, and the like. The major reason for concentration in fluid milk is that this market is much more remunerative in its cost than is the market for manufactured products.



Over the past ten years, Maine's milk production has increased at the relatively low growth rate of less than 1% per

year. For the future, an increasing demand is anticipated from out-of-state consumption.

- i. The dairy industry is characterized as being a part time activity of many small producers

Dairying in Maine has been particularly characterized by the farmer who milks a few cows to supplement his other farming activities. Being a marginal activity and one that has been mainly a side-line to farmer, dairying has never really achieved a foothold in Maine as a major contributor to the State's economy. Farmers with few cows have not been particularly active in improving their stock or increasing production. If costs of production go up, they are inclined to drop out of dairying. As a result, the number of Maine farms selling milk has decreased about 50% since 1944.

- ii. The major problem the industry faces is high production cost

Milk production costs in Maine are high. This is a result of two factors: inefficient management and high grain costs. Perhaps the historically limited local market supplied by Maine producers did not encourage them to become low cost dairy men. Now, however, Maine producers are faced with the fact that dairymen in other New England states have been more competitively inclined and, as a result, have utilized more efficient techniques

to reduce the cost of operation. Although Maine dairies directly ship over 50% of their milk into the Boston market, a large portion of this volume is accounted for only because the market has grown in size at a rapid rate. It will require low cost production to match competition and maintain future growth.

Feed costs represent about 38% of the total cash expenses involved in dairy operation. The relatively high cost of Midwestern grain delivered in Maine has also been one of the deterrents to lowering production costs.

- iii. Increases in population should encourage Maine dairymen to seek a larger share of the market

Since much of the dairy land in the Southern part of New England is being converted into housing and industrial sites, other supply sources for dairy products will have to be increasingly established. Maine dairymen, by becoming more management conscious and reducing operation costs, can capture a larger share of the growing market for milk in the Boston area.

Some of the possibilities to be explored in reducing costs are the development within the State of improved forage crops, utilization of potato waste and other local grown commodities for the feed ration, and reduction of the transportation costs of grain. Maine's farmers should

look to dairying as a full-time occupation, increasing the size of herds, concentrating on higher production per cow, and utilizing more modern techniques in dairying activities. Attention must be directed toward better breeding and the use of high value feed concentrates to enhance productivity.

4. Food Products - Fisheries

The Fisheries in Maine Can Grow, but at Present They Are Bogged Down by Tradition

The fishing activities in Maine are fairly extensive, consisting of four important commercial types: lobsters, red fish or ocean perch, herring, and the inter-tidal species. At present,



lobster volume accounts for the largest portion of the total activity as is apparent from the following chart:

LOBSTER LANDINGS AND IMPORTS

Year	Maine Landings (000 lbs.)	U.S. Landings (000 lbs.)	U.S. Landings and Canadian Imports (000 lbs.)
1929	-	11,747	51,792
1950	18,353	23,194	73,334
1951	20,759	25,943	74,911
1953	22,300	28,102	74,620
1955	22,718	28,939	74,898
1957	24,403	30,152	74,774

Because of its importance to the economy, the lobster fishery was studied in detail; the scope of the program did not permit detailed consideration of the more minor fishing activities.

- i. While growth has been experienced, the lobster industry is marginal and unprogressive

Over the last decade the lobster landings in Maine and in the United States have increased; Canadian imports have declined slightly. The major reasons for this growth are increased intensity of fishing due to better prices, improved boats and equipment, and the finding of new lobster populations.

The dealer has traditionally been the key factor in the industry. Frequently he finances the fisherman and

PORTION OF TIME THAT LOBSTER AND CRAB
FISHERMEN ARE ACTIVELY ENGAGED IN FISHING (1957)*

<u>No. of Months Fished</u>	<u>Percentage of Fishermen Fishing</u>
1	.9
2	3.9
3	13.4
4	12.5
5	12.9
6	16.5
7	5.7
8	7.0
9	5.1
10	3.7
11	1.0
12	17.6

*Only those reported on licence applications

Size of sample - 65.5%

Total number of lobster & crab fishermen licensed-6, 068

assumes all marketing functions. Of the 200 to 300 licensed dealers in Maine, only 20 to 25 are considered major operators: the remainder are small operators with limited financial capability.

The majority of the dealers operate on a marginal basis. Continually faced with moving a perishable commodity, subject to sudden price changes, the dealer is always in a precarious marketing position. Often he must dump his lobster to cover operating commitments.

Lobster dealers have only been interested in dealing with the live animal and have not been interested in exploring opportunities in processed lobster. This lack of interest is partially explained by the fact that there is a sizeable loss of meat in processing and that in the past most packaged products of this nature had little market success;

now, packaged products are practical and widely accepted. Of key significance, however, is the fact that the traditional lobster dealer has resisted change in any form; the feeling being that increased processing activities will decrease dealer control of the industry.

ii. The lobster industry is faced with three major problems:

- . Disorganization at the fishing grounds
- . Weak marketing position
- . Lack of research

The major problem in the production side of the lobster industry is in the state of the fishing grounds and the attitude of the lobster fishermen toward these grounds. Each fisherman tends to take as much lobster as he can within legal limits. Actually, by letting the lobster grow to a more mature size, the fishermen would earn larger returns. But the philosophy has been to fish on a "first-come, first serve" -- "take all you can" basis.

Dealers ship to either institutional customers directly or to the New York fish market which establishes price. This marketing pattern permits the lobster dealer very little price control and, as previously mentioned, only a few dealers have the financial resources to exert influence over their marketing relationships.

Research into new markets, techniques of processing, and shipping have been resisted by dealers in the past.

This is true even though transportation of live lobsters is still a problem and the promise of larger markets exists in the development of large scale circulating salt water tanks throughout the country to maintain live lobsters.

- iii. To expand operations and promote stability, the lobster industry in Maine needs to exercise more control over production and to research new fishing and marketing techniques

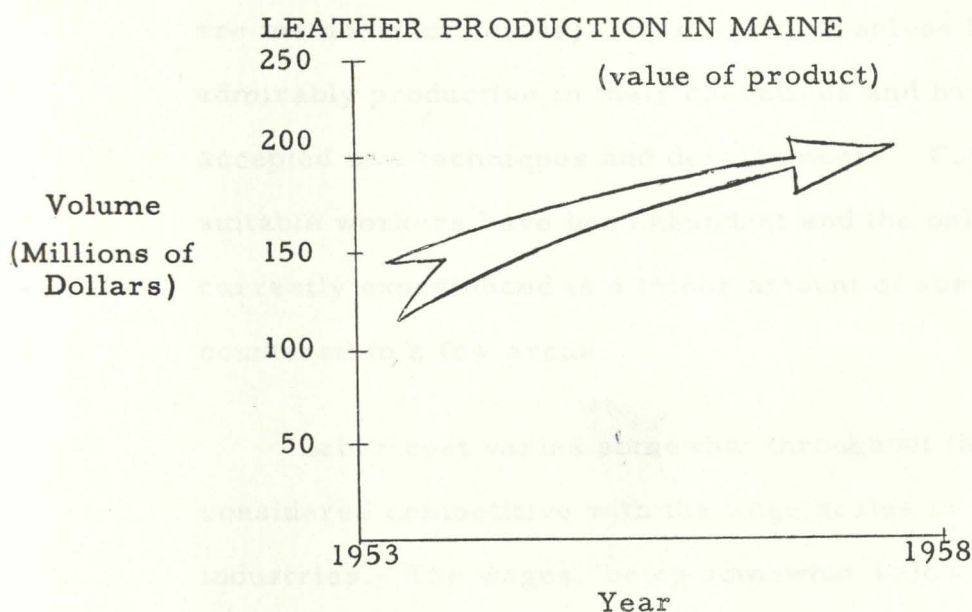
From an economic standpoint, a more reliable supply of lobster is needed to provide stability in the industry and to enable wider national distribution techniques to be profitably effected. Maine fishermen must develop this reliable supply by improving catching techniques, holding (temporary storage), and distribution. Use can well be made of tank operations at divergent points throughout the nation to supply the local market at these locations. It is conceivable that should the present Maine industry not effect these improvements in supply and distribution, a growing market demand for lobster could encourage Midwestern and Western tank operators to integrate backwards -- into wholesaling operations and perhaps even to the point of dealing directly with reliable fishermen.

The possible development of frozen lobster might be an alternate to distribution techniques such as the salt water tanks mentioned above. The advent of such a development would have considerable impact on stabilizing the industry.

More research is required in this area as well as in the actual techniques of fishing, to effect the stabilization, control, and profitability of the lobster industry in Maine.

VIII. THE SHOE AND LEATHER INDUSTRY IN MAINE HAS SHOWN INCREASING IMPORTANCE IN THE LAST SEVERAL YEARS; ITS FUTURE APPEARS FAVORABLE

The Maine shoe and leather industry is one of the stronger of the growth industries in the State and has accounted for 14.7% of the value of all manufactured products in the State (1958). The chart below shows the favorable increase in the industry's volume since 1953. Most of this volume relates to shoes since shoe manufacturing



accounted for 85% of the total product value produced; leather tanning and finishing, leather findings and miscellaneous leather items account for the balance.

The future also looks bright; the Maine shoe industry can be expected to grow. Being closely correlated to population growth, the anticipated increased population should create new large demands in the next decade; where population in the United States, for example, increased 22% between 1947 and 1958, the U.S. production of shoes

increased 25%. If the same correlation continues, an increase of 17% to 20% appears feasible in this decade.

1. Labor and Operating Conditions for the Industry Have Proven Satisfactory in Maine

The shoe industry's labor force in Maine has generally proven productive and adaptive. Union relationships have been good where they presently exist (approximately 20% of the workers are members of unions). Workers themselves have been admirably productive in their operations and have historically accepted new techniques and developments. For the most part, suitable workers have been abundant and the only problem currently experienced is a minor amount of absenteeism encountered in a few areas.

Labor cost varies somewhat throughout the State but is considered competitive with the wage scales in other Maine industries. The wages, being somewhat below those in other areas, has enabled the Maine manufacturers to remain competitive in the industry by offsetting somewhat the higher transportation costs they incur.

Capable supervisory and clerical help for this industry are difficult to find within the State. It is a common problem to find that skilled personnel are in demand and usually are hard to find. This can also be extended to management personnel who are not being trained to the extent required by the industry.

Other operating conditions such as business climate, facilities, taxes, and so forth, have been favorable to the industry. Thus, the combination of the excellent labor situation and operating conditions has contributed immensely to the growth of this industry in the State.

2. A Few General Problems Exist:

- . High Transportation Cost
- . Raw Material Cost
- . Inadequate Banking Relations

Transportation costs are important because Maine manufacturers must ship their products into, and compete in the important markets in the Midwest and South Central states. The actual cost of bringing the raw materials into the State is borne directly by the shoe manufacturer; the cost of shipping shoes to customers is borne indirectly since adjustments must be made in the sale price to compete favorably with products made in other geographic areas. In low priced shoes the transportation cost adjustment is particularly noticeable since it comprises a fairly large part of the total cost; in higher priced shoes, transportation cost is not so significant since it constitutes a smaller portion of the total cost of the product even though the cost of shipment is about the same per unit as in the lower priced lines.

A reduction in the cost of raw material might be effected by increasing the amount of tanning operations in the State. Most of the large manufacturers presently obtain their leather through

the Boston leather market. It is conceivable that a favorable cost of tanning in Maine could be effected which would more than offset any increase in the transportation cost of shipping untanned hides to the State. The tanning of lighter weight hides which are used in the more expensive shoes would be particularly attractive.

The shoe and leather companies could also benefit from closer ties with local bankers and a greater use of local banking facilities. Many shoe manufacturers presently go outside the State for most of their long term financial needs; some believe Maine banks cannot handle their requirements, others indicate that Maine banks are unsympathetic to the industry -- believing it to be an unstable business; and finally, others borrow out of state to keep certain proprietary information confidential. It would appear that closer relationships with local banks help to increase loan activity in the State and would encourage the expansion of existing concerns. In addition, the industry would be provided with a valuable source of professional counsel with regard to financial consideration in new products, markets, and operations.

3. Growth Opportunities for the Shoe Industry Include:

- . Upgrading Product Lines
- . Diversification into Personal Leather Products
- . Tanning Operations

Maine shoe manufacturers may increase their market by expanding into the production of higher quality shoes. An appreciable market exists for medium priced footwear, and

while this area is competitive, Maine manufacturers should be able to effectively serve this market. The production of medium quality shoes is recommended for Maine producers since the skills involved in the production of medium quality shoes are relatively comparable to the skills necessary in the generally lower priced lines presently being produced. In addition, medium priced shoes do not encounter the frequent style changes inherent in high priced shoe lines; thus, they present a relatively stable type production item for Maine's manufacturers. Transportation costs, by constituting a smaller portion of total costs should generally contribute to enhancing the profitability of operations.

There also appears to be a profit opportunity in the production of medium priced wallets, handbags, and other personal leather articles. These products utilize many of the same fabrication skills required in the manufacture of shoe uppers, and having a high value to weight ratio, diminish transportation cost problems. Tradition, up to now, has deterred shoe manufacturers in general from producing these other lines; Maine manufacturers can however, secure an appreciable advantage by pioneering efforts in this direction.

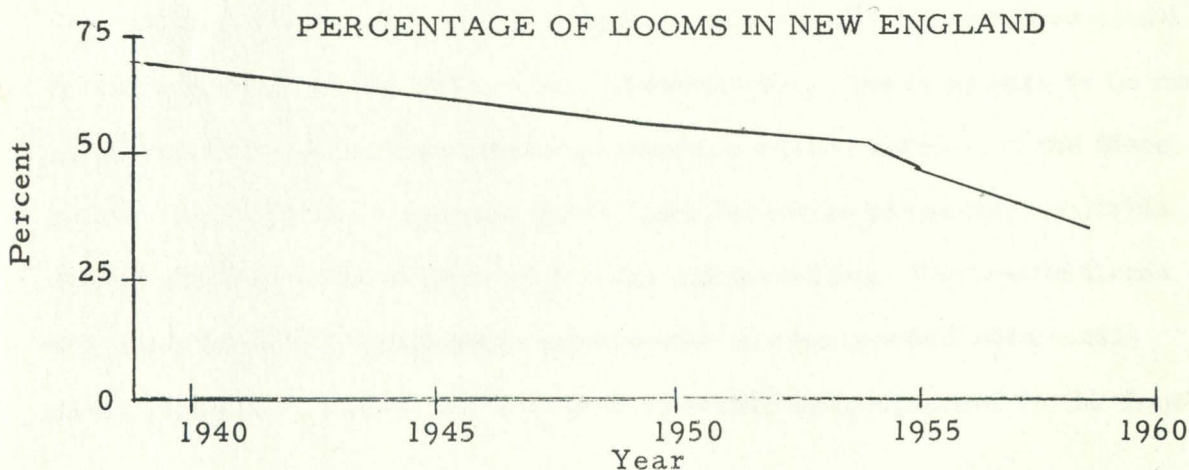
The tanning operations provide not only an opportunity for greater control and potentially lower cost, but also for increased employment opportunities in the State.

IX. THE STATE OF MAINE, FROM A REALISTIC APPRAISAL, CAN EXPECT A CONTINUED DECLINE IN COTTON TEXTILES AND A POSSIBLE STABILIZATION OF THE WOOLEN TEXTILE INDUSTRY

New England is now relatively unimportant as a producer of cotton textiles and moderately important as a producer of woolens. In 1925 New England consumed 26.5% of the cotton used in the textile industry, by 1950 it consumed only 7.5%. The reasons for the decline of cotton textile activity has been the lower wage rate and transportation advantages in raw and finished materials in the South and an increase in imports of cotton yardage.

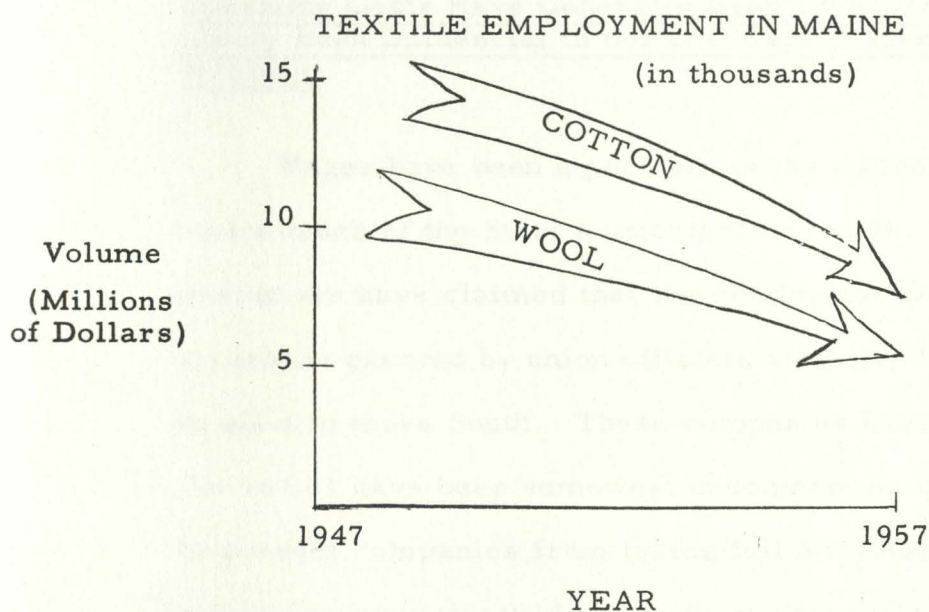
The situation in the woolen textile industry is somewhat similar to the experience in the cotton segment: decline has been experienced, however, more recently some stabilization has appeared. Woolens have primarily been affected by a 35% drop in total wool consumption from 1948 to 1957, a decrease of 40% on a per capita basis, and also by an increase in imports.

In Maine, these industries have followed the pattern of New England. The following chart shows Maine's production trend in



in textiles that has been experienced from 1948-1958. The comparatively recent, rapid decline in cotton production is quite apparent. Since World War II, however, the decline of the woolen industries has been less severe than in cottons.

Employment has followed the pattern of production and has been dropping steadily as the chart below illustrates. Total employment in the woolen and worsted plants declined 55% from 1947 to 1957; in cotton, it decreased 44%.



The future of the cotton industry appears dim but woolens could likely stabilize in the near term. Realistically, there appear to be no good reasons why cotton textile production should remain in the State unless it would be to exhaust production facilities presently available. Being generally associated with large corporations, the textile firms are governed by management groups who are concerned with maximizing profit. If this can be more favorably accomplished in the South,

they will move. In the woolen industry, the majority of firms remaining are medium to small family owned and operated. These owners have a home state preference, wanting to work and live in Maine. In addition, their major asset, the plant building itself, would be difficult to sell if they moved out and would be likely, therefore, to represent too great a loss to those smaller companies. It can be expected that most of these woolen and worsted firms will remain in the State at least through the next generation.

1. Operating Costs Have Generally Been Unfavorable and Have Likely Been Influential in the Low Capital Investment of the Industry

Wages have been a problem in the cotton textile industry where much of the State's unionization exists. Cotton company executives have claimed that the continuous pressure for wage increases exerted by union officials virtually forces companies to elect to move South. These companies have also claimed that the unions have been somewhat uncompromising in their efforts to prevent companies from taking full advantage of production efficiencies which could result from new equipment. This has widened the technological gap between the older plants in Maine and the newer, better equipped plants in the South.

In the woolen industry, the activities of the unions appear to be of a different nature. Inasmuch as many woolen companies are owner-managed, the woolen workers feel that they have close personal relationships with the individuals who maintain financial control over the companies and will, thereby,

receive fair treatment.

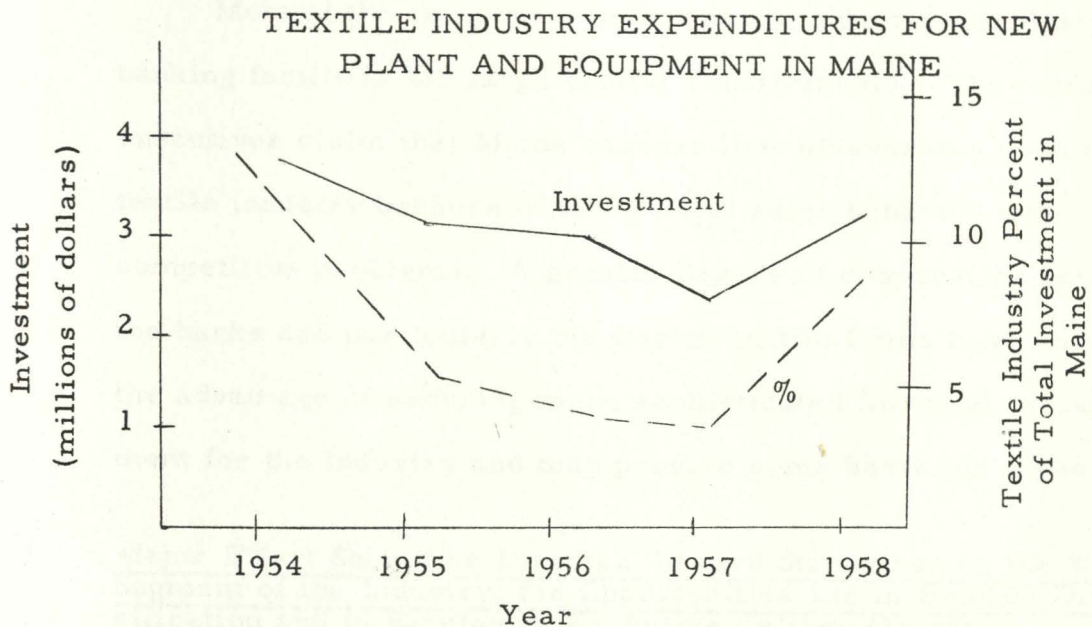
With the exception of wages, raw materials shipping costs represent the most significant economic problem to Maine cotton textile plants. Transportation costs are about 4% of the raw material; this has the effect of subtracting about 2% from the margin available for before tax profit for a cotton textile producer in Maine as compared to one in the South.

The woolen industry mainly uses imported and domestic stock purchased through the Boston wool market and does not appear to be at an appreciable disadvantage in comparison to the South.

In shipping finished goods, Maine producers are at a disadvantage in shipping to the Midwest and, in some cases, to the Middle Atlantic states. In addition to differences in distance, the rates charged by Northern carriers are reported to be higher than those charged by carriers in the South. This rate differential has also contributed to placing producers in Maine at a disadvantage.

The investment in new plant and equipment has been very low in the cotton segment of the industry and only moderate in the woolen segment. The increasing difficulty of operating a cotton textile manufacturing establishment in the North has discouraged many companies from investment in new facilities. Many woolen companies, on the other hand, believe expansion

opportunities exist for their northern operations and are purchasing new equipment and making additions to their plants; this has represented most of the investment in new facilities in the textile industry in Maine. The chart below shows the pattern of investment in relation to all Maine industry. Although the product value of the industry has exceeded 10% of Maine's total manufactured value, the industry's investment has accounted for considerably less.



2. Some of the More Minor Factors Influencing Textile Operations in Maine are Water Pollution, Power Cost, and Finance

Executives of cotton and wool factories which do their own dyeing and converting, expressed concern about the recent water pollution investigations. They were concerned with any problems which might arise and wished to be appraised of the manner in which they could cooperate to achieve correction and prevention of pollution.

High power costs were frequently mentioned as contributing to excessive operating costs. These are important but since they only account for about 1% of total manufactured value, they are less significant than other more pressing problems. The high heating costs are believed to be compensated by the lack of extensive humidity control which is required by producers in the South.

Most of the companies in the textile industry use Boston banking facilities for large capital requirements. The textile executives claim that Maine bankers look unfavorably upon the textile industry because of its cyclical sales behavior and competitive problems. A greater degree of cooperation between the banks and particularly the woolen textile firms might have the advantage of securing more sophisticated financial management for the industry and may provide some basis for expansion.

3. Major Effort Should be Directed Toward Strengthening the Woolen Segment of the Industry; the Opportunities Lie in Product Diversification and in Employing Executive Caliber Operating Personnel

The problems of the cotton textile industry in the State of Maine are so imposing that this segment of Maine's manufacturing activities should be expected to continue to decline. It is believed that the woolen industry currently is in a stronger position and that its future prospects are relatively favorable.

Both woolen and cotton textile companies, to maintain the best position possible, should concentrate on the active promotion of branded products. More advertising should be directed toward achieving customer preference for branded and packaged products.

Maine's woolen industry should also take a look at the profit potential which can be achieved by manufacturing fabrics from man-made fibers. These have been gaining in importance in recent years; the noncellulosic yarns (nylons, acrylics, protein, etc.) appear to have the most favorable future.

A potential product diversification area also exists in the manufacture of woolen apparel in the State. Maine should experience an advantage in establishing clothing fabricators in the State since northern woolens are considered superior to their southern counterparts. Maine has a labor force which possesses a high degree of manual dexterity and being an important producer of woolen goods, it would seem to present a good opportunity for apparel manufacture. In addition, Maine's close proximity to the major apparel centers in New York City and its advantages taxwise could influence companies to establish profitable subsidiary operations in Maine, while maintaining principal sales and designing offices in New York.

The woolen industry should also seriously consider the employment of executive calibre operating personnel so company

principals can maintain a closer relationship with markets and customers. Most woolen firms at present are "management poor". Company principals find themselves with less and less time to spend in the market place. This has the effect of loosening ties with customers and limiting exposure to style and product trends. Consideration, therefore, should be given to either hiring suitable assistants or training junior executives in the business.

* * * * *

In conclusion, Maine's industries provide a good base for growth:

<u>INDUSTRY</u>	<u>OUTLOOK</u>
PULP AND PAPER	MODERATE INCREASE
LUMBER	GOOD
WOODWORKING	EXCELLENT
FOOD PRODUCTS:	
BROILERS	DYNAMIC
POTATOES	VERY GOOD
DAIRY	FAVORABLE
LOBSTER	CAN GROW
TEXTILES:	
COTTON	POOR
WOOL	STABLE

ECONOMIC ACTIVITIES WITH GROWTH POTENTIAL FOR MAINE

In this chapter, the potential for Maine's future economic growth is viewed in terms of new opportunities that can flourish within the State. The word "new" is used here in a broad sense to include those types of activities that may presently exist within the State to some small degree as well as those that are completely new to the State in the sense that they are nonexistent at the present time.

The search for identifying new opportunities for Maine enabled a comparative analysis of trends in technological developments, in new products, in new industries, in population, and in economic performance. Specialists met with the technical areas that were under consideration and with the areas of economic growth participated in the selection of the areas.

CHAPTER FOUR

NEW ECONOMIC ACTIVITIES WITH GROWTH POTENTIAL FOR MAINE

This search for new opportunities for Maine was not limited to a single type of economic activity. A list of 30 potential economic possibilities was developed (see Volume IV). From this list, nine were selected as representing the most promising opportunities for the State to concentrate its activities on at this time. These are listed on the following page.

NEW ECONOMIC ACTIVITIES WITH GROWTH POTENTIAL FOR MAINE

In this chapter, the potential for Maine's future economic growth is discussed in terms of new opportunities that can flourish within the State. The word "new" is used here in a broad sense to include those types of growth activities that may presently exist within the State to some small degree as well as those that are completely new to the State in the sense that they are nonexistent at the present time.

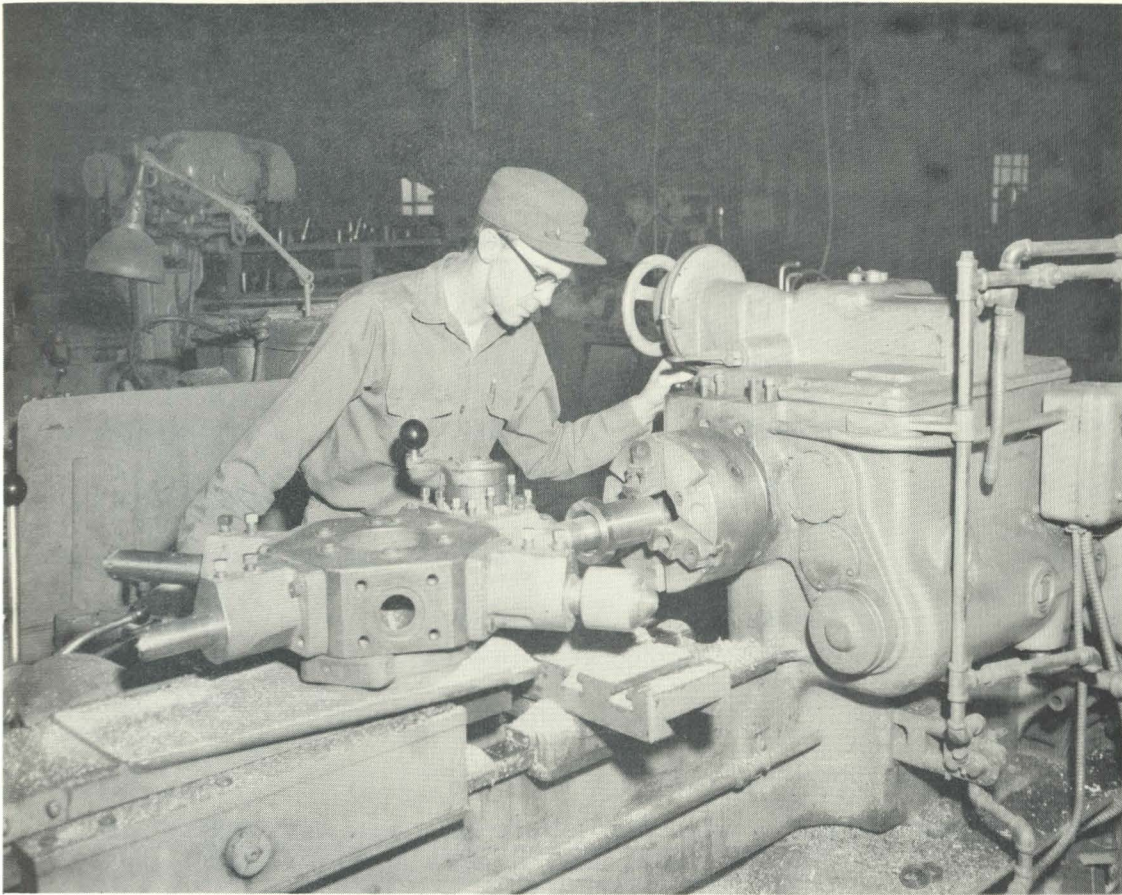
The search for identifying new opportunities for Maine entailed an extensive analysis of trends in technological developments, in new products, in growth industries, in population, and in consumer preference. Specialists who deal with the technical areas that were under consideration and with forecasts of economic growth participated in this comprehensive analysis.

This search for new opportunity showed one important fact, and, that is, many types of economic activity are feasible for operation in Maine. A list of over 30 good economic possibilities was developed (see Volume IV). From this list, nine were selected as representing the most promising opportunities for the State to concentrate its activities on at this time; these are listed on the following page.

LIGHT METAL FABRICATION
RECREATION PRODUCTS
SPECIALIZED PRINTING
CONFECTIONARY
TRAILERS
ELECTRONICS
PHARMACEUTICALS
PRODUCTS FROM THE SEA
RECREATION AND TOURISM

In selecting these economic areas as most promising at this time, one of the basic objectives was to match the requirements of the economic activity to the assets of the State. Furthermore, those activities that were deemed most desirable were the ones that could grow in the future, could suit the characteristics of the State and its people, and finally, could encourage growth and opportunity in additional related areas.

Each of the suggested activities is reviewed separately in the following discussion.



I. LIGHT METAL FABRICATION OFFERS AN OPPORTUNITY TO INCREASE THE SKILLS AND WAGES OF MAINE'S WORK FORCE

The light metal fabrication industry encompasses a wide range of activity, extending from cutlery and tools to the more technical areas of instruments and computers.

A long term growth has been experienced by the industry for some time but has varied with specific products; some representative products with their volumes and rate of increase are shown on the following page.

VOLUME OF SELECTED METAL PRODUCTS

	Volume (Millions)		Percent Increase 1947-1957
	1947	1957	
Cutlery	143	191	34%
Hand Tools	273	312	14
Hardware	578	1,359	235
Office Machines	179	346	97
Computers (all types)	294	1,008	350
Instruments	1,140	2,129*	86*

*1947 - 1954

1. The Industry, Located Primarily in the Northeast, Will Experience a 27% Growth in the Sixties

The light metal fabrication industry overall is expected to grow about 27% in the sixties. Many specific products, however, will grow at much greater rates. Instruments and controls, for example, are expected to double in volume as will office machinery.

The industry is largely located in the Northeast sector of the United States; over 90% of cutlery production is situated here, as is 40% of hand tools and office machines, around 50% of computers, and over 60% of instruments. Since this industry is situated close to Maine, it is comparatively easier to attract it to the State than would be the case for those industrial activities located some distance from Maine.

2. Maine's Labor and Market Position Can be Particularly Attractive to the Industry

This industry appears to be particularly suited to Maine for a number of reasons. The State has a labor force which has exhibited a high degree of dexterity, a prime requisite in machining and assembly activities. Maine, in addition, being close to the densely populated areas of the Northeast, is also close to a large market for the products of the industry. Light metal fabricated products, for the most part, are relatively high value, low weight items which would not present Maine producers with a cost of shipping disadvantages; this is particularly true in the more advanced fields of instruments and computers.

The industry appears economically feasible for location in Maine, and would be particularly desirable since it would be conducive to increasing the skills and wages of the younger members of the work force.

II. RECREATION EQUIPMENT OFFERS EXCELLENT GROWTH OPPORTUNITIES

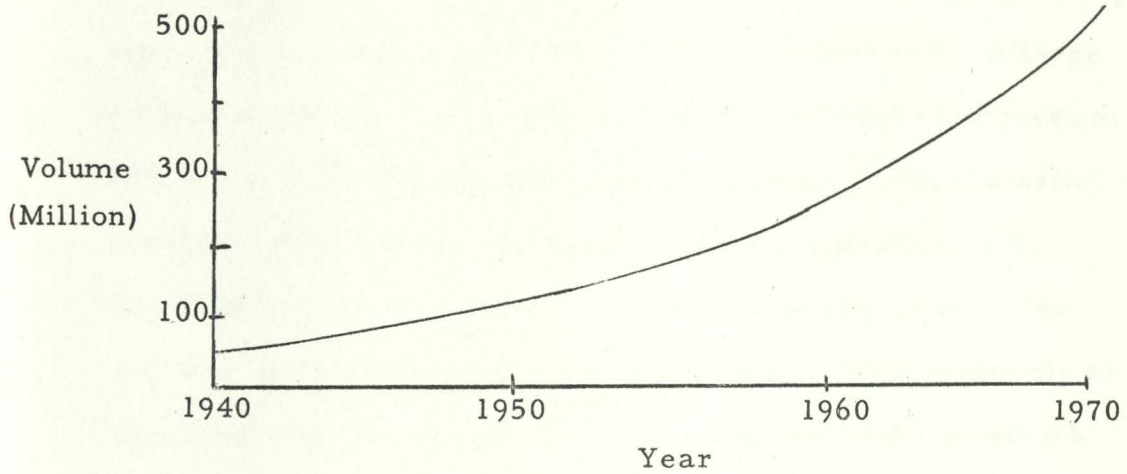
The recent national increase in available leisure time and discretionary income has permitted more people the opportunity to participate in sports and recreation activities. Thus, the recreation industry will continue to grow in the future and so will the demand for recreational products.

The recreational products industry covers a wide variety of items ranging from golf clubs, balls, tennis rackets, on into boats and bowling balls. The industry is generally optimistic about its future, anticipating that virtually all areas of it will grow substantially in the sixties. One of the primary areas suggested in this field for Maine is boats.

1. The Boat Industry is Expected to Grow 100% in the Sixties; It Presently is Located in the East and Midwest

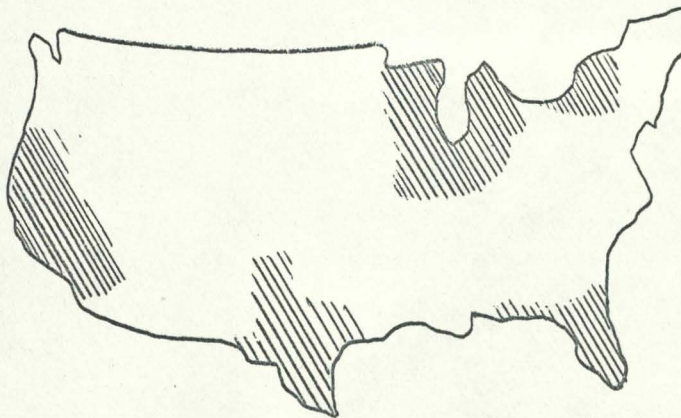
In 1941 the sales of boat manufacturers totaled \$21 million, by 1959 this had increased a fantastic 1,070% to \$225 million. By 1970, the industry is expected to climb to \$500 million, a skyrocketing increase as the chart on the following page illustrates.

BOAT SALES



While the industry presently is scattered throughout the country there is a fairly heavy concentration of boat manufacturers in the Eastern and Midwestern sections. In the chart below is shown the manufacturers of general lines of boats.

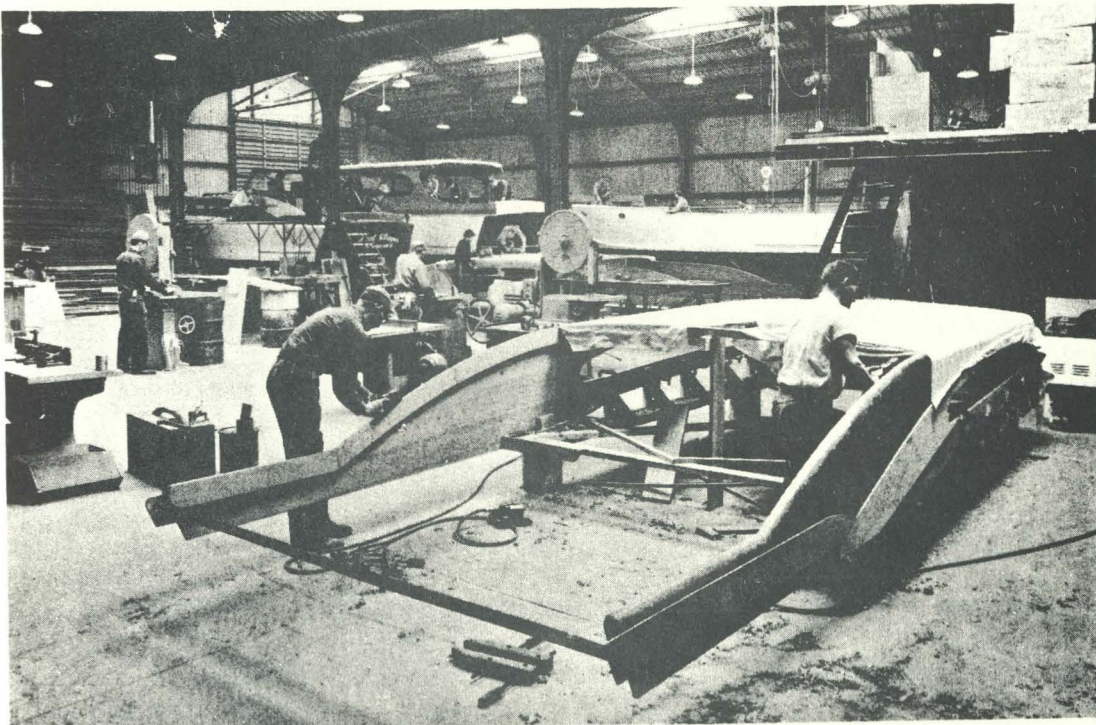
LOCATION OF BOAT BUILDERS



(Shaded areas indicate location)

2. Boat Building Admirably Fits the Industrial Characteristics Desired by Many Maine Communities

Today, the manufacture of boats is still mainly a job shop type operation with considerable hand work involved. A large portion of the smaller craft are basically of wood construction; 65% wood, with 20% of metal, and the balance, 15%, of plastic. A trend toward the increased use of plastics appears to be developing at the present time and could rapidly grow in the sixties. Both the metals and plastic, which refer primarily to aluminum and fiberglass, are also adaptable to the small job



shop operation; the fiberglass in particular, is closely related to many of the woodworking skills and could well serve to broaden

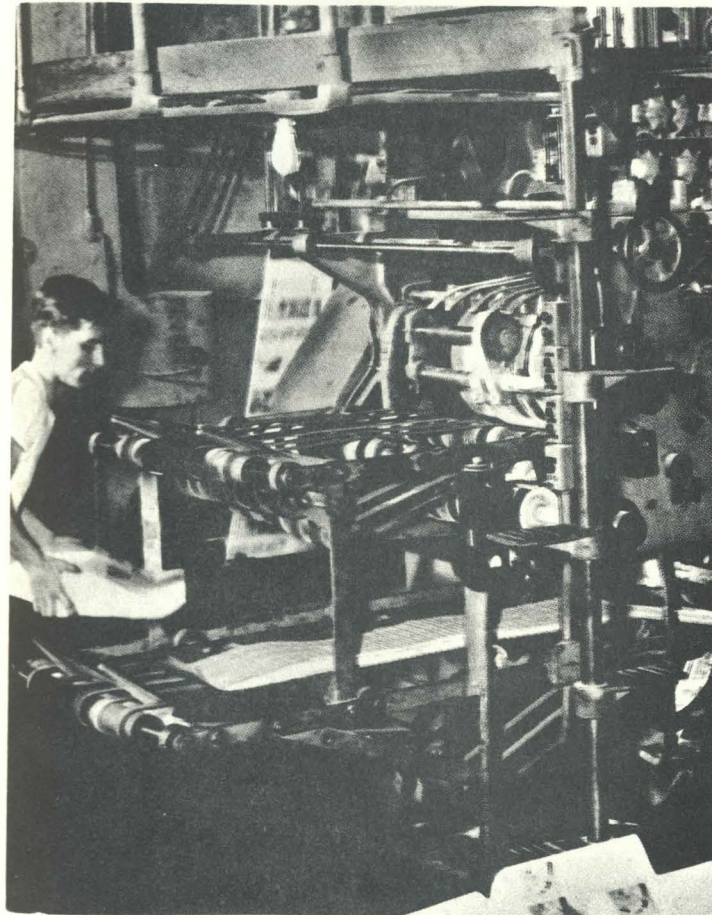
the base of a shop utilizing such production techniques.

Maine offers many features which are well suited to this industry, thinking in terms of all types of recreation equipment. There presently exists an abundance of working force with potential craftsmen's ability in the State, materials are readily available - in some cases the lumber requirements can be produced within the State, and a relatively high value to weight situation exists in consideration of shipping. The production nature of the industry, being generally of a job type operation involving considerable hard work, lends itself well to the character and desires of many Maine communities.

One of the largest pluses in favor of this industry is the nearby market for the products. As vacationing in Maine as well as in New England as a whole increases, the regional demand will increase. The large population centers around New York and Boston - as well as the Midwest - places Maine in a favorable position to service the requirements of this vast market.

Again, it is important to look to producers of various recreation products, golf clubs, skis, bats, gloves, and so on - in addition to boat producers. All of these recreation products are well suited to production in Maine.

III. MAINE'S PRINTING INDUSTRY CAN GROW BY EXPANDING INTO SPECIALTY TYPES OF PRINTED PRODUCTS

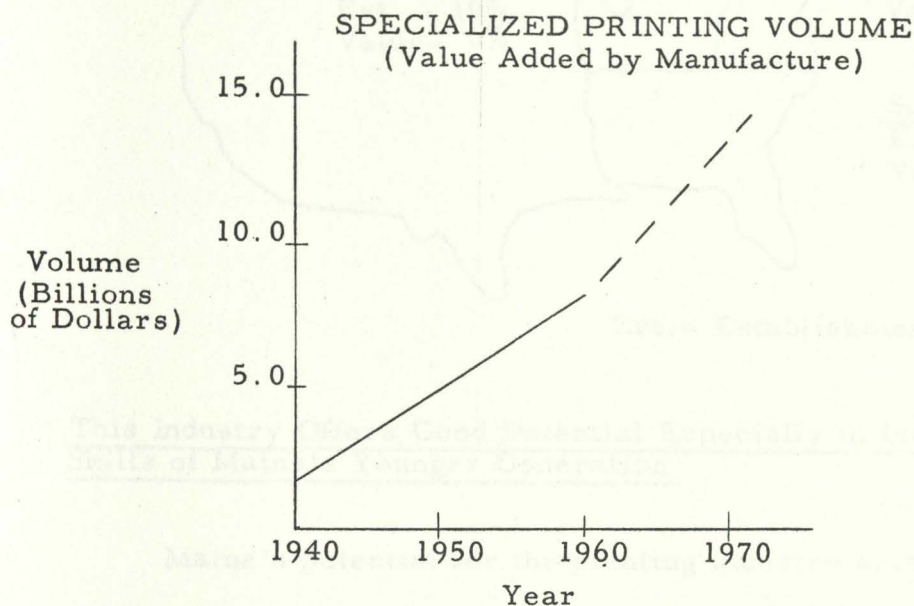


The more specialized activities in custom printing . . . items such as stationery, folders, promotional material, business forms, books, pamphlets, and so forth . . . offer a good opportunity for the expansion of Maine's printing industry. The industry in general is experiencing increased activity due to the growth in population and to increased interest in publications of various types.

1. Specialty Printing Will Increase 60% in the Next 10 Years; the Industry Presently is Located to a Large Degree in the Northeast

The expansion in volume of 60% in the sixties will be influenced by a number of trends: larger school populations, more comprehensive use of business forms, enlivened interest

in books and periodicals, and a preference for custom and distinctive brochures and personal stationery. The chart below shows the volume historically and the future expectations for the industry as a whole.

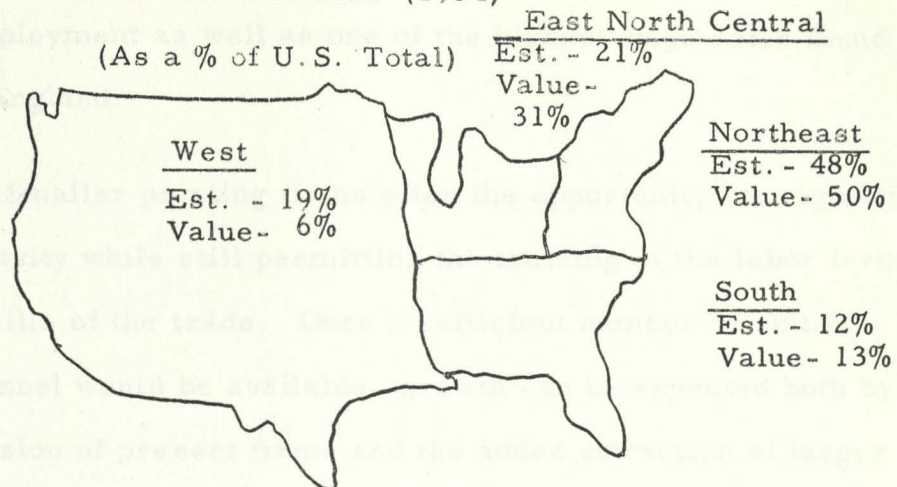


The growth of specific products will vary in considerable degree as they have in the past: for example, in the period 1947 - 1957, business forms have increased 480%, books and pamphlets 150%, greeting cards 137%, calendars 295%, catalogs 110%, and so on.

At the present time the Northeast houses 4,307 printing establishments,* almost half of the total in the country; the value added in manufacture is \$1,627 million, also approximately one half of the total as shown in the illustration on the following page.

*Excludes newspaper publishing

PRINTING ESTABLISHMENTS AND VALUE ADDED
IN MANUFACTURE (1954)



Est. = Establishments

2. This Industry Offers Good Potential Especially in Increasing the Skills of Maine's Younger Generation

Maine's potential for the printing industry arises from its adaptive work force, its opportunity to provide generally lower operating costs, the internal source of paper, and its close proximity to important established publishing and editorial offices in Boston and New York. Cost of transportation appears to offer no problem; special mail rates permit printers in the Southwestern part of Maine to ship to the Midwest at the same cost as can publishers situated in either Boston or New York.

The operations of a printing plant, especially in the larger plants, require skilled labor. Average training time for a printer is 3 years if little formal education in the field is had, with formal training this period can be decreased considerably. The development of this skill should be particularly attractive

to the younger generation in Maine. It can offer them stability in employment as well as one of the highest wage rates found in New England.

Smaller printing firms offer the opportunity for expansion of activity while still permitting the training of the labor force in the skills of the trade. Once a sufficient number of skilled personnel would be available, growth can be expected both by expansion of present firms and the added attraction of larger ones.

The industry has been fairly stable in the past, though a leveling has been in effect through much of the latter 1960s. Presently, and that a greater increase will be experienced in total production in forthcoming years. The trend in the industry is shown below:

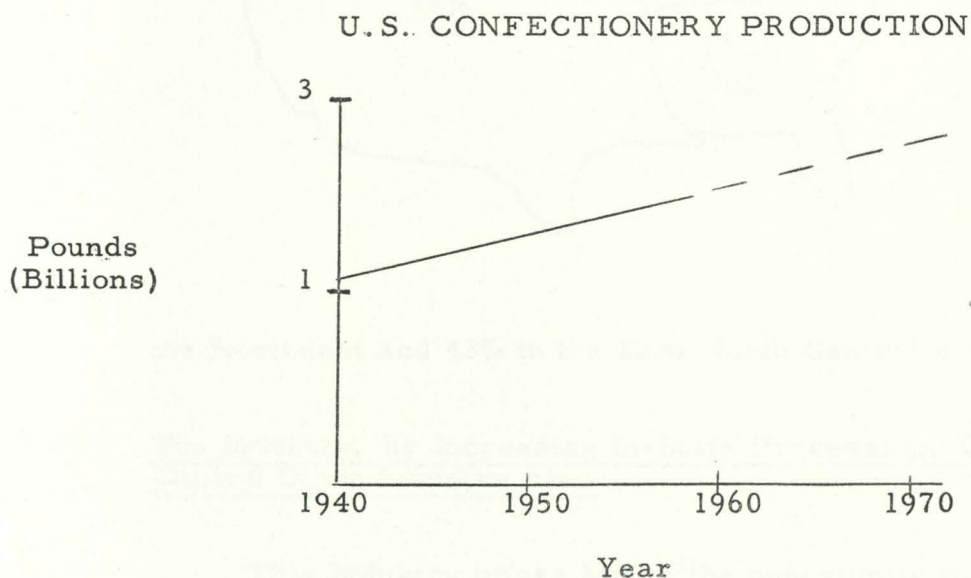


IV. CONFECTIONERY PRODUCTS CAN OFFER MAINE THE OPPORTUNITY TO INCREASE IN-STATE PROCESSING OF RAW MATERIALS

A wide variety of goods are included in confectionery products; hard and filled candy, toffees, nougats, fudge, coated fondants such as chocolate creams, chocolate covered nuts and fruits, and so on.

1. The Confectionery Industry has been Stable; Its Volume is Likely to Increase

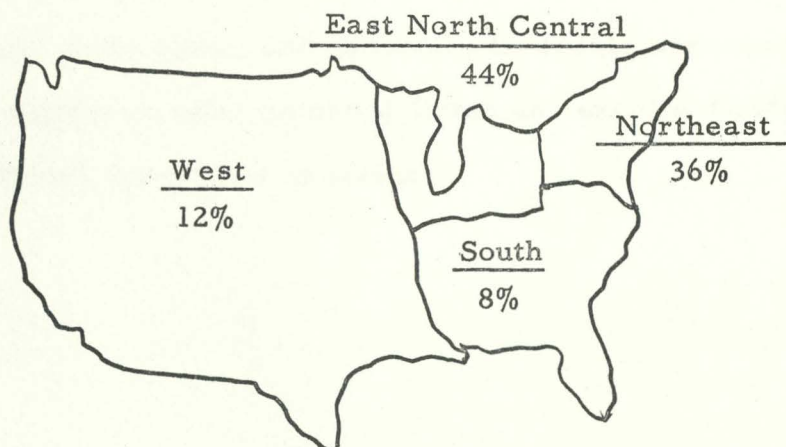
The industry has been fairly stable in the past, though a leveling has been in effect through most of the fifties. Indications presently are that a greater increase will be experienced in total production in forthcoming years. The trend in the industry is shown below:



The stability that is apparent from the chart coupled with a substantial export potential (Canada is the leading nation importing candy from the U.S.) and the large eastern market warrants Maine's consideration of this industry as an economic growth opportunity.

Production of confectionery products in the United States is primarily divided between the Northeast and East North Central regions. The chart below shows the current production areas of confectionery products in terms of pounds produced. In 1958, about 36% of total domestic production originated in

CONFECTIONERY PRODUCTION
(1958)



the Northeast and 43% in the East North Central states.

2. The Industry, by Increasing In-State Processing, Can Help to Expand Other Industry Also

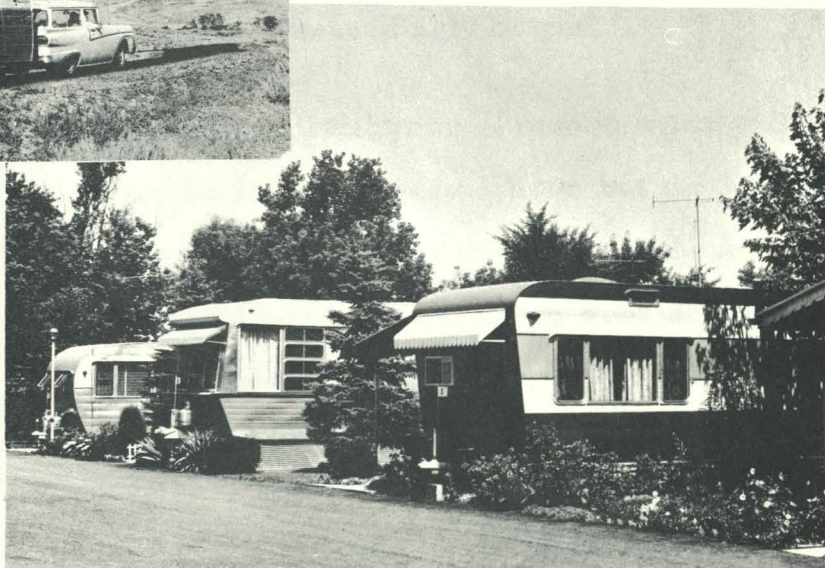
This industry offers Maine the opportunity to increase the integration of its raw material production, speaking broadly, to

a manufactured product. In the production of confectionery products, the principal ingredients are cocoa, sugar, milk, and eggs. In any U.S. location, sugar and cocoa are primarily imported but in Maine, the other two items, milk and eggs, could likely be produced near the plant site. Thus, Maine could make strides toward internal processing - doing as much work within the State as is possible - with the objective of shipping out virtually a completed product.

Maine should look to firms producing packaged products since these lend themselves to the situations of requiring hand dipping and packaging, a relatively high value to cost relationship and also to a relatively constant demand. The adequate supply of labor, plant sites, and generally favorable operating conditions would appear to offer potential firms an excellent inducement to establish operations in Maine.

V. TRAILER PRODUCTION CAN BE AIMED AT THE GROWING MARKET IN THE NORTHEAST

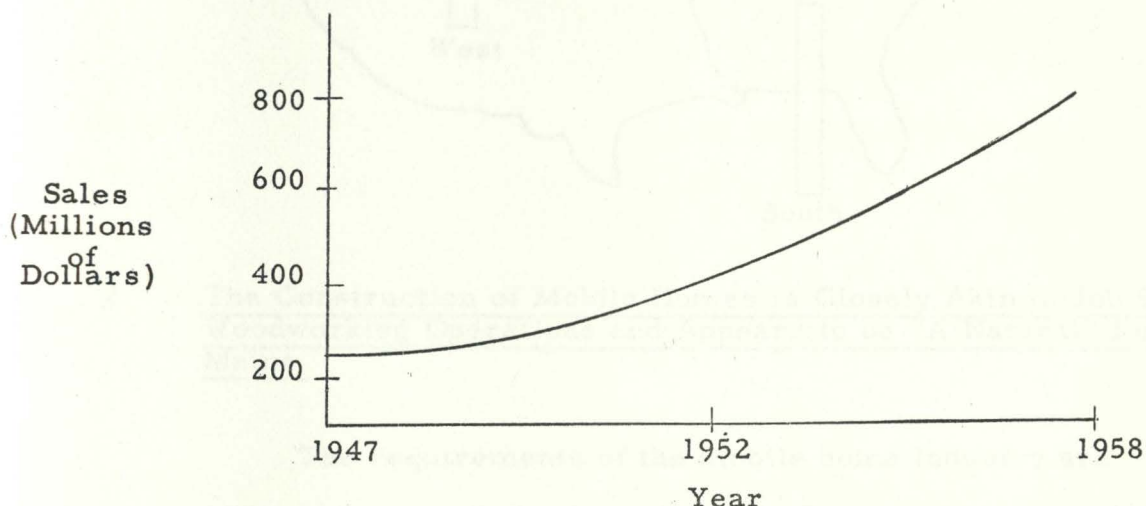
Trailers, as referred to here, include primarily mobile homes and travel trailers. Mobile homes are the larger units which are considered to be semi permanent dwellings; travel trailers are the vacation trailers, so to speak, which are designed to be pulled behind an automobile. The average selling price of a mobile home in 1959 was \$5500; the travel trailer average price was \$1,800.



1. Sales of Mobile Homes and Trailers are Likely to Triple in the Next Decade; Presently 55% of Sales are Made in the East

In the last decade, the volume of mobile homes has tripled. The trend in industry sales is shown below.

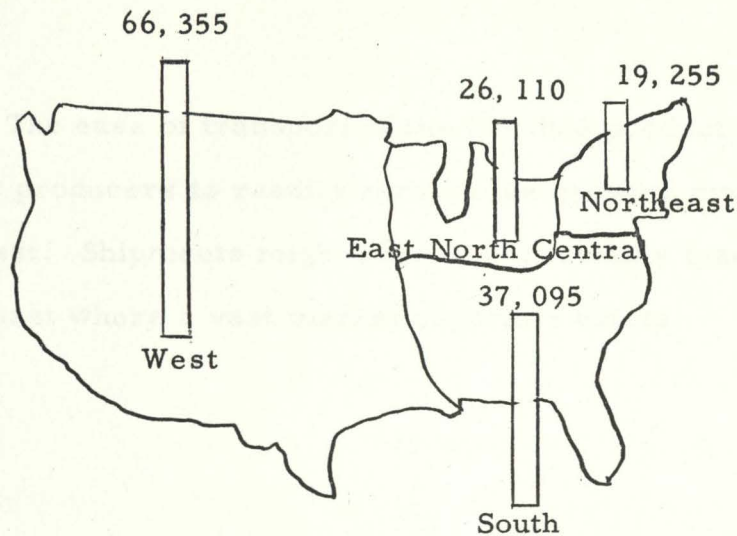
U.S. MOBILE HOME AND TRAVEL TRAILER SALES



From present indications, growth in the succeeding decade should exceed that of the present. The future in the construction of mobile homes appears exceedingly bright.

The geographic distribution of mobile home sales is shown in the chart on the following page. Note that the Northeast region accounts for about 13% of the 1959 purchases. To Maine alone, 1,225 mobile homes and trailers were shipped in 1959; New England shipments totaled 5,100.

MARKET FOR MOBILE HOMES - 1959



2. The Construction of Mobile Homes is Closely Akin to Job Shop Woodworking Operations and Appears to be "A Natural" for Maine

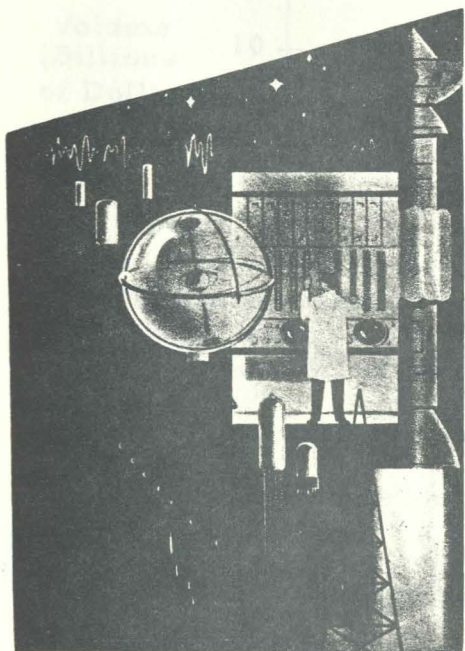
The requirements of the mobile home industry are particularly suitable to Maine. The typical mobile home manufacturing operation is small to medium in size and of a custom nature; this lends itself well to many small towns in Maine. Semi to unskilled workers can be employed fruitfully. In addition, much of the work presently evolves around the woodworking industry, an area where many of Maine's workers have experience.

Most mobile homes and trailers today are built in a custom job shop, requiring a large amount of hand work in fabrication and in assembly. Various materials are employed in construction; a steel frame forms the base, a wood frame fashions the sides and roof, and exterior surfacing materials include Masonite and

aluminum. On the interior, wood paneling is most frequently used.

The ease of transport of the finished product would permit Maine producers to readily service the growing market area in the East. Shipments might also be conceivably made to the Southeast where a vast market presently exists.

VI. THE CONTINUED GROWTH IN ELECTRONICS PRODUCTS CAN INFLUENCE MAINE'S PLANNING FOR ECONOMIC EXPANSION

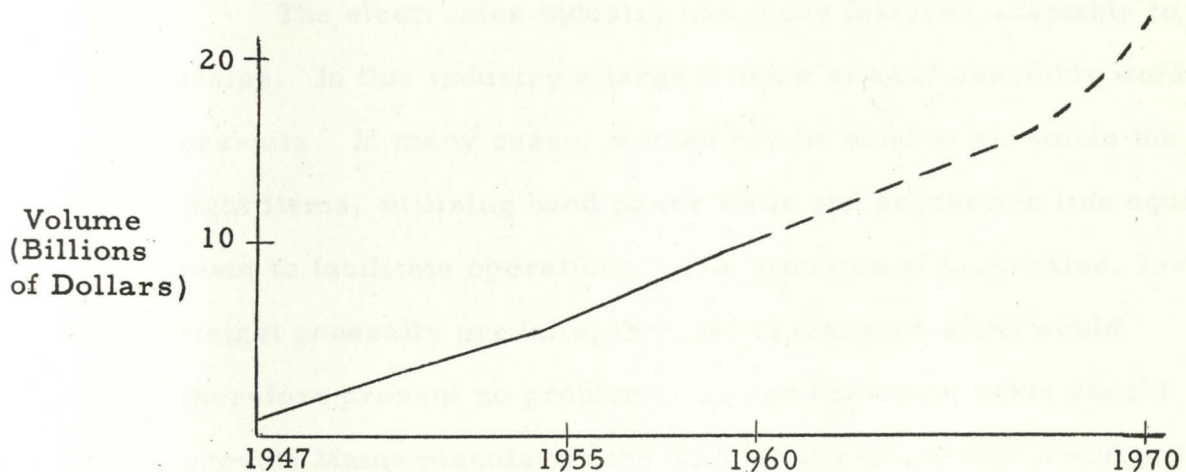


Electronics is one of the major growth industries of the past decade that will continue its rapid rise through the sixties. The products of the industry may be grouped into six major categories: consumer products, military electronic equipment, commercial and industrial electronic equipment, electron tubes, semi-conductor devices and other electronic components.

1. The Electronics Industry is Expected to Increase its Volume by 200% to 300% in the Sixties; It Presently is Located Close to Maine

Electronics will double and perhaps even triple in volume by 1970. In 1947 the industry volume was \$1.7 billion, by 1960 it attained an estimated \$10.0 billion, a 490% increase, as noted on the chart on the following page. Some trends presently apparent in the industry, will contribute to its future growth. Foremost among these are miniaturization, microminiaturization, and molecular electronics. Another important trend is toward

ELECTRONICS VOLUME*



* Includes radios and related products, electronic equipment, electronic tubes, semi conductor devises and electronic components.

the fabrication of components as part of the equipment assembly process, an example of this being the development of "complex components" and complete equipment sub-assemblies.

A large part of the electronics industry is situated in the Northeast. As the table below shows, almost one half of the electronics producers are located in this region.

LOCATION OF ELECTRONICS PRODUCERS (1954)

(Radios, electronic tubes, telephone equipment, and related communications equipment)

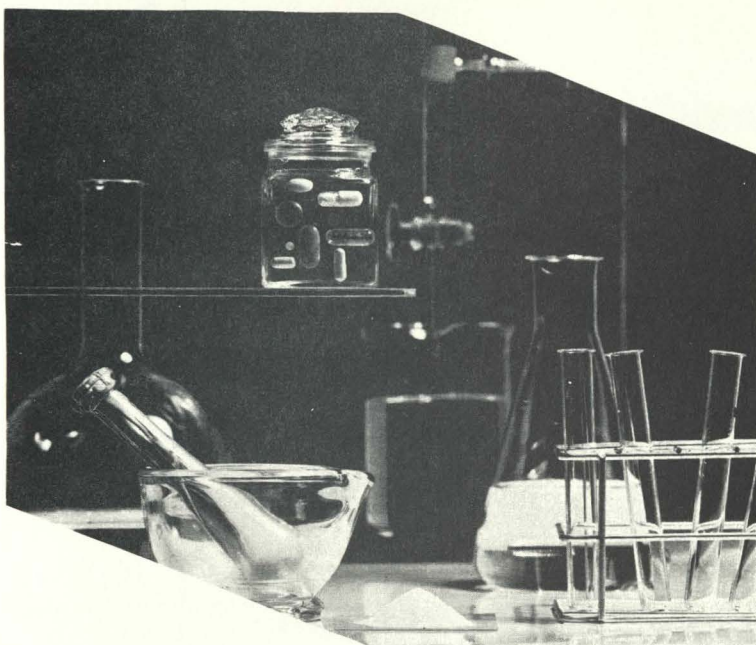
Region	Establishments		Employment	
	Number	Percent	000's	Percent
Northeast	1006	47.3	215	48.9
East North Central	586	27.6	148	33.7
South	149	7.0	35	8.0
West	384	18.1	42	9.4

2. Maine has Features Which are Compatible to Electronics Manufacture

The electronics industry has many features adaptable to Maine. In this industry a large amount of hand assembly work prevails. In many cases, women can be used to assemble the light items, utilizing hand power tools and production line equipment to facilitate operations. The situation of high-value, low weight generally prevails; the cost of transportation would therefore present no problem. Lower operating costs should provide Maine manufacturers with an advantage that would permit Maine companies to remain competitive.

Being close to the extensive research activities around Boston would provide Maine manufacturers a distinct advantage. Technical personnel could readily keep in close professional contact with research developments and perhaps even participate in them.

Maine should take advantage of the apparent desire of Northeastern firms to remain in the area and should direct its attention to securing additional firms in the industry. While some smaller firms would find the advantages of a Maine location conducive to moving their entire operation to the State, it is likely that the larger companies would find it more practical to initially initiate branch operations in Maine.



VII. PHARMACEUTICALS CAN INFLUENCE THE GROWTH OF CHEMICAL TYPE ACTIVITY IN MAINE

One of the areas in the broad field of chemistry that is expected to do extremely well in this decade is the pharmaceutical or drug industry. Research outlays have been particularly lavish and should prove fruitful with a host of new product introductions in the sixties.

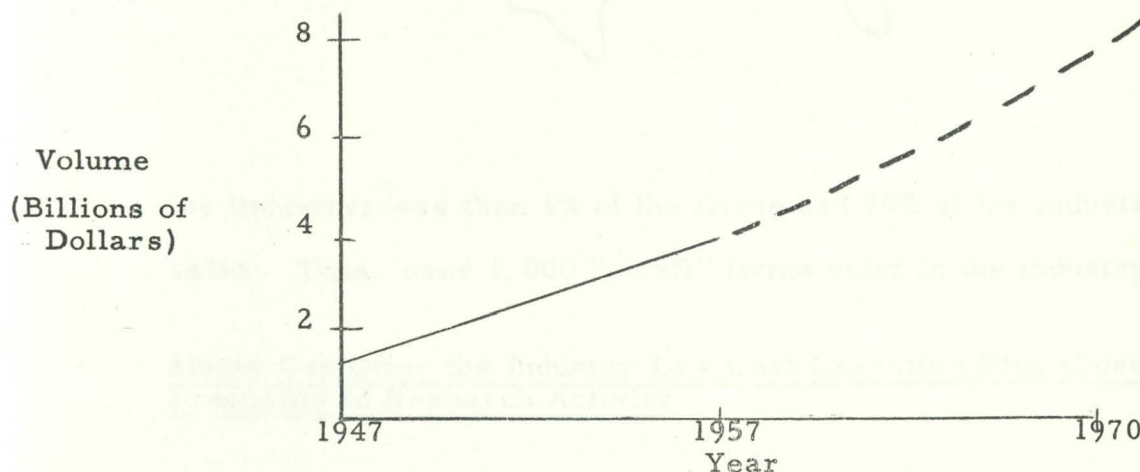
The activities of the pharmaceutical industry fall into three major areas: research and development of new drugs, production of medicinal chemical constituents, and formulation of constituents into prescribed dosage forms. While a number of firms in the industry specialize in only one of the activities, the majority of companies

perform all of these operations.

1. Pharmaceuticals Will Grow 100%; The Industry is Heavily Oriented to the Northeast

Vast expansion of the pharmaceutical industry has occurred in the last decade. In 1947, the volume of the industry was \$1.2 billion, in 1957 it was \$3.7 billion, an increase exceeding 300% in the ten year period. For the sixties, the drug industry is expected to double its present volume by 1970. Most product

PHARMACEUTICAL VOLUME

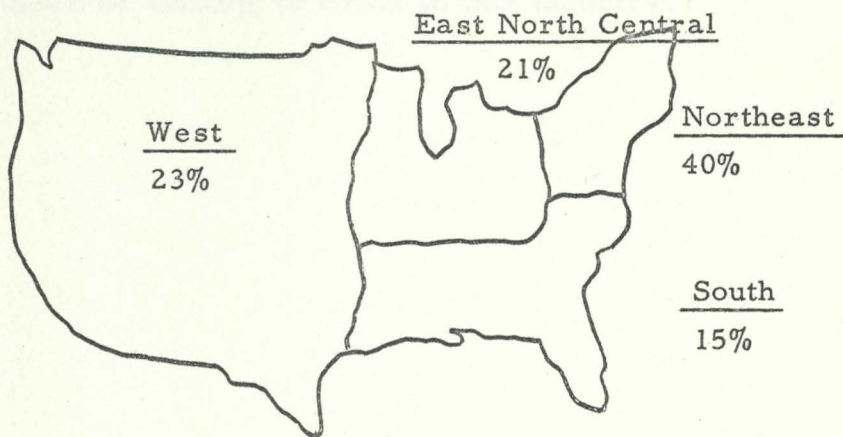


types within the industry, as listed below, will be instrumental in the anticipated growth:

Proprietarys	Hormones
Antibiotics	Biologicals
Vitamins and Hematinics	Hypnotics and Sedatives
Tranquilizers and Hypertensives	

Geographically, the major volume of the pharmaceuticals are produced presently in the Northeast and in the East North Central regions of the United States as shown in the following chart. A large number of firms, over 1,100, are currently in

GEOGRAPHIC PHARMACEUTICAL PRODUCTION
(Number of Establishments)



the industry; less than 1% of the firms had 80% of the industry sales. Thus, over 1,000 "small" firms exist in the industry.

2. Maine Can Offer the Industry Low Cost Operation Plus Close Proximity to Research Activity

Maine can readily satisfy the two most common requirements of the pharmaceutical industry: available labor and fresh water. In addition, production of drug products in Maine would present an operating cost advantage through lower labor investment which would be little affected by transportation since drugs, once again, fall into the category of high-value, low weight.

Maine has an advantage over other regions of the country in being closely situated to the vast research network in the Northeast devoted to medicine. Producers in Maine could readily participate in new developmental programs. Such a proximity coupled with the availability of land, water, and labor force, should be inviting to firms in this industry.

VIII. PRODUCTS FROM THE SEA OFFER A NEW AREA OF EXPLOITATION

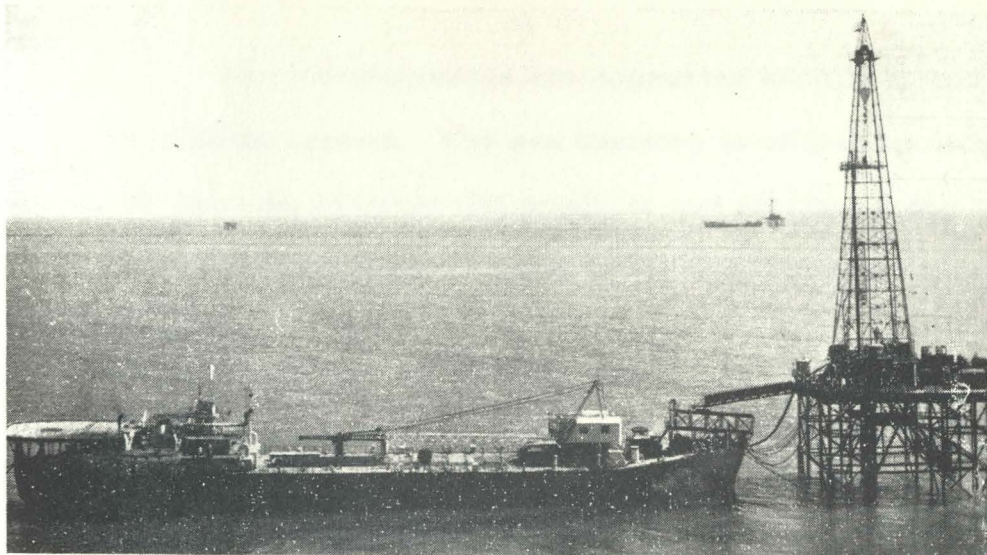
One of the newest frontiers to challenge man is the sea. Here lies a virtually untapped potential multi-billion dollar opportunity. Several areas in which recent developments portend large future industrial growth are discussed in the following paragraphs. Maine's large sea coast provides an excellent opportunity for "getting in on the ground floor" and serious consideration should be focussed upon this possibility.

1. The Sea Can Give Many New Kinds of Industry

The future of the sea, in being new and challenging, can offer many opportunities. Some of the potentials that exist for this "industry" are the following:

Submarine Travel Recent explorations beneath the polar ice cap by nuclear submarines have indicated that commercial trade routes are possible. Utilizing the route below the ice cap, the distance between England and Japan is 5,000 miles shorter than present routes. By utilizing submarine "freight trains", a new era in transportation may be on the horizon.

Mineral Extraction At present, magnesium and bromine are secured from sea water; sulphur and oil are procured from ocean floor probes. Present research in this area is expected to increase vastly the minerals which can be extracted economically from the sea.



MINERAL EXTRACTION FROM THE SEA

Food Supply As the world population increases, the sea may offer a lucrative source of edible flora and fauna. For centuries the Japanese have harvested algae from the sea for food; these algae are rich in vitamins and minerals. Plankton, tiny floating or drifting creatures of the sea, may be used as fodder for domestic animals.

Seaweed Here arises what might be considered one of the most interesting of all possibilities. Presently, seaweed is considered an important additive of fodder and fertilizer. Kelp meal is being used in the diets of mink and chicken with interesting results . . . the mink develop shinier coats, the chickens lay larger eggs. Algin, another seaweed derivative, is replacing gelatin as a stabilizer in ice cream.

Seaweed also offers possibilities in application to other products such as antibiotics and sausage casing. It has been used successfully as a soil conditioner which has increased the productivity of the land.

Scientists have found that fish tend to collect around certain types of seaweed, thus they have been led to speculate on the possibility of raising fish in cultivated areas of the ocean. A "fish farm" might prove feasible in the future.

New developments are appearing each day, and new doors are being opened. The sea industry is still in its infancy - and while some commercial products are feasible today, there remains little doubt but that it will expand tremendously in the future.

2. Maine Should Look to Three Areas for Exploiting This Potential of the Sea:

- . Oceanographic Research
- . Sea Products
- . Equipment Fabrication

Basic to the future commercial growth of sea industries is current sea research. While both the U.S. government and private concerns are interested in ocean exploration, the facilities established to date are quite meager. Thus, there is a good opportunity for Maine to get in on the ground floor, and exert concerted effort to become a leader in oceanographic research.

Maine is also in an excellent position to develop commercial sea products. With its extensive coastal area and its favorable business and living conditions, the State has much to offer potential concerns in this field.

In addition to research and products, a vast market should open to the area of equipment fabrication. Both research equipment such as instrumentation, special ships, etc. and commercial equipment needed to harvest sea products will be required. Additionally, the expansion of the fleet of nuclear powered

submarines and other vessels in the course of the next two decades offer Maine manufacturers the opportunity to do sub-contract work for the prime contractors of these sea defense products.

Maine, in summary, should encourage both private concerns and government agencies to establish research centers in oceanography in the State (see Volume IV for listing of private companies and government groups interested in such research). Also, it would be of advantage to "get in on the ground floor" by encouraging firms knowledgeable in commercial ocean products to expand their operations in Maine into some of the feasible new products that can be extracted from the sea.



IX. RECREATION AND TOURISM OFFER GOOD GROWTH POSSIBILITIES FOR MAINE

With the decided trend toward an increase in discretionary income and increased leisure time, has come more emphasis on

recreation and vacations. Maine, being close to the dense population areas of the east, should regard this trend as one which can result in significant economic activity for the State in the future.

Maine's natural attributes makes it ideal for vacation and recreation. To attract vacationists is predominantly a matter of providing suitable recreation and tourist facilities. Facilities in parks, camp sites, beaches, and other types of recreational activities should be thoroughly studied and where necessary, expanded; these must be provided before an extensive increase in tourism and recreation can be expected. Maine, in addition, should also encourage the development of more tourist accommodations - new motels are sorely needed. To make such investments economically feasible, an opportunity may exist to extend the normal vacation season by providing for fall and winter sports activities. It may also be feasible to consider the possibility of year round vacation sports resorts. In any event, Maine can take advantage of the increased trends in recreation and vacationing, but it must gear itself to the needs of these guests.

Since a preliminary study of Maine's recreation industry is being conducted by the University of Maine, recreation has not been dealt with directly in this project. The potential importance of this economic activity to Maine is of such significance and possible impact that its roll must be recognized in this review of economic growth areas. After the preliminary statistical information on the inventory of the recreation facilities in Maine has been compiled, the next step required is an analysis of the specific needs and desires of the tourists and

vacationists who look to Maine for recreation. Once these needs have been identified, it will be a matter of taking corrective action - as identified in the analysis - to provide these features within the State.

It should be recognized that the recreation-tourism area does offer excellent promise for growth and should be considered as one of the foremost economic potentials for Maine.

X. EXPANSION IN SERVICE ACTIVITIES WILL FOLLOW INDUSTRIAL AND COMMERCIAL GROWTH

An important point to note is that as industrial and commercial activity and population increase, the demand for services such as utilities, medical care, lawyers, police, public works, and so on increases. Most of these services are directly related to increases in the population; where the population is growing, doctors are needed to provide adequate medical care, a more extensive public works program is required, additional police and fire facilities must be furnished, and so forth.

In some cases the trends in the increased consumption of certain areas and services will also provide the impetus for expansion of services. By 1970, for example, electrical power useage in the average home is expected to increase 5 times over present levels; this alone will require a sizeable increase in electrical utility output. The increased use of the automobile, as another example, results in additional requirements in repairs and in related services..

In general, therefore, the expansion in the service area will depend primarily upon the growth in other industrial activities and in the population; it will be necessary to achieve these others first. To significantly increase service functions before the demand for them is established, would be pointless. Thus, while increased activity in this

area is recognized, it has not been considered as an area requiring major attention in this report.

* * * * *

This chapter has presented a description of some industry and economic activities that appear particularly suited for Maine and can offer growth potential in the future.

Again, it is emphasized that many opportunities exist . . . capable entrepreneurial ability and adequate financing could well blossom many of those dormant areas for Maine in the future. The industries here discussed are not presented as being all inclusive. They merely provide a starting point where the chances of establishing new industry appear most favorable at the present time.

CHAPTER FIVE

THE PROGRAM FOR ECONOMIC DEVELOPMENT

THE PROGRAM FOR ECONOMIC DEVELOPMENT

Growth is generally expected in the future. In New England, the relative advancement of the various states will be determined by the degree to which states are successful in stimulating industrial and economic activity within their boundaries. Those states which aggressively promote themselves stand to gain the most both in absolute growth and in relation to their neighbors.

To encourage economic growth, the State of Maine and its local communities must make themselves attractive to those economic activities, industry, tourism, or others, that they wish to have flourish. These activities are more likely to become established where the business climate is compatible to their need.

A broad program encompassing both long range as well as more immediate goals must be formulated to give direction to the activities of various groups. Such planning will also permit the State to structure the assets it will have to offer for industrial development in the future.

To attain the desired results, planning must be implemented by aggressive enthusiasm on the part of the leaders in the State. Economic development takes time, in some cases years; staunch determination is necessary to achieve the goals and to motivate others in their attainment. Strong, optimistic, aggressive, and determined leadership is required to

accomplish the program of economic development.

This chapter presents a broad review of the programs that are suggested for the State and local communities in their endeavor to enhance economic activities within their boundaries. Specific things to be done are outlined here; the detailed means for realizing these programs is presented in Volume V of this report. The program for general economic development at the State and community levels is covered first, and is followed by a generalized plan of action for the Department of Economic Development.

I. THREE BASIC OBJECTIVES SHOULD GOVERN GENERAL ECONOMIC DEVELOPMENT IN MAINE:

- . EXPAND PRESENT INDUSTRY
- . ENCOURAGE THE FORMATION OF NEW INDUSTRY
- . BRING NEW ECONOMIC ACTIVITIES TO THE STATE

In formulating a program for economic development, the objectives for each phase must be identified: encouraging expansion of present industry, the formation of new industry within the State itself, and finally the attraction of new economic activities to the State. Each of these three areas are important in the broad program to increase the economic activity. Each covers a specific part of the total approach necessary to progressively expand activities within the State.

THE STATE PROGRAM

II. MAINE'S IMMEDIATE PROGRAM SHOULD BE CONCERNED WITH FORTIFYING COMMUNITY DEVELOPMENT EFFORTS AS WELL AS STIMULATING ECONOMIC GROWTH

One of the prime needs in Maine at the present time is to form strong community development groups throughout the State. Many of these groups are presently weak and need to be fortified before they can be expected to be effective. It is necessary to encourage such effective community action for two reasons. First, the community must show its receptivity to new industry and expand efforts to secure it. Second, the communities require the assistance of the Department of Economic Development to do an effective selling job. One of the major objectives in the immediate program, therefore, is to raise the status of development organizations and to secure the cooperation of them all to promote features of the State of Maine.

If effective results are to be attained, strong leaders must direct these local endeavors. The local groups, in addition, must be trained in the techniques of economic development. It is through building strong community development groups throughout the State, that economic development can forge ahead more rapidly.

III. ECONOMIC DEVELOPMENT IN MAINE MUST ALSO BECOME ORIENTED TOWARD LONG RANGE PLANNING

- . RESEARCH ACTIVITIES SHOULD BE STIMULATED
- . EDUCATION MUST BE EXPANDED
- . ZONING PLANS SHOULD BE MORE EXTENSIVE
- . TAX STRUCTURES MUST BE RE-EVALUATED

Programs for achieving more immediate results in economic development must be supplemented by those geared to enhance the assets of the State in the future. One of the long range goals should be to increase research activities: industry in the future will be more technically oriented than it has been in the past. If Maine is to share in the growth of industries, it must equip itself to serve industry by providing features and services industry will require in its development. This center could be active in theoretical as well as applied research for the various industries situated in the State. For the larger industry in Maine, a separate research facility could likely be formed; for the smaller industry, a jointly sponsored research center might be more appropriate.

Education programs must be designed to teach higher skills. Trends in industry point to the growing need for more technicians and specialists who are well versed in modern technology. With increased attention being devoted to automation and the general use of precision equipment, it is to the advantage of the younger generation to become knowledgeable in such skills both from an operating standpoint as a trade and from the developmental side as a profession. With the demands of a growing population will come greater need for more scientists, doctors, engineers, businessmen, and on through other

areas of professional activity. The educational system in Maine must plan to expand education in these higher skills in the imminent future if Maine is to contribute to the educational requirements of this generation.

Effective zoning will help to induce industry. The congestion that exists in some of the Southern New England states points up dramatically the scarcity of land. Maine is in a favorable position to look forward to the utilization of its lands and to plan ahead. Industry in looking for new sites is aware of the significance of the plant's surroundings and of the facilities for employee housing and recreation. Neither industry nor residential communities desire to mix together haphazardly. It is recognized that many communities in the State have done a commendable job in their zoning programs. These groups should look forward to even more extensive programs which could assure industry of suitable location and of desirable housing and recreation sites for employees. Adequate provision for housing is particularly important where workers must be attracted to the State, as undoubtedly will be necessary if Maine expects to bring in new industry.

Tax programs must be geared to permit industry to flourish while providing for the necessary services they require. Although increasing taxes is frowned upon, consideration should be given to the fact that it might prove more advantageous in the long run to have sufficient revenue available to provide those facilities and services which industry needs to help it flourish. In any tax program the

anticipated benefits to be derived from the use of the funds must be weighed against the added burden that it places on the industry and on the residents of the State.

IV. TO BE EFFECTIVE, ECONOMIC DEVELOPMENT NEEDS SUPPORT

The old adage, "You have to spend money to make money," is also true in economic development. The task of expanding Maine's economic base must be approached as a full time business venture if favorable results are to be achieved. It is mandatory to have suitable talent in this activity, to provide adequate promotion, and to utilize research programs to expand and attract various economic activities in Maine.

The Department of Economic Development must be geared to operate effectively. It should be provided an adequate budget to:

- (1) be staffed with competent personnel and
- (2) to carry out properly the program of community assistance and State promotion.

Industrial and economic development today is a highly developed activity, one requiring capable personnel to make it function properly.

Promotion is necessary and expensive. More personal contacts are needed; for promotion the more of this type of activity that is done to introduce industry to Maine, the greater will be the results. Industry must become acquainted with the State, its features, and advantages -- and the approach to this function is essentially a selling job.

THE COMMUNITY PROGRAM

V. COMMUNITY COOPERATION IS ESSENTIAL TO SUCCESS

While the State can initiate and promote economic development, the communities and the people themselves must be receptive to new economic activities. Only they can establish the business climate that will be attractive to industry. In many ways, communities can receive the assistance of State and Federal agencies in establishing the program and guiding its direction, but it falls on the communities themselves to want it and to carry it out.

1. Strong Leaders Must Be Selected

In setting out to raise the economic activity level in the State, a firm foundation in community development groups must be built. And to fashion these groups, capable people are needed - especially strong leaders. Thus, one of the first requirements to this program is to select leaders who are virtually interested in development activities and who will be aggressive in the pursuit of them.

2. For Promotion Purposes, Communities Should Consider Regional Grouping

Too frequently, small communities have found that they

have little to offer prospects and also that the cost of supporting a development agency - the manpower requirements, the promotion expenses, and so on - prohibitive. In view of the problems of such small communities, we would like to propose that they consider the possibility of merging with adjacent communities to form a regional development group. By joining forces, they could, in many cases, combine assets and could perform a more professional and effective promotion function. The regional approach is of value because it forms the base for attracting economic activities to the region. This can result in jobs for people in communities surrounding the one in which an activity is ultimately located.

3. Local Development Groups Should Also be Formed; They Can Act in an Advisory Capacity

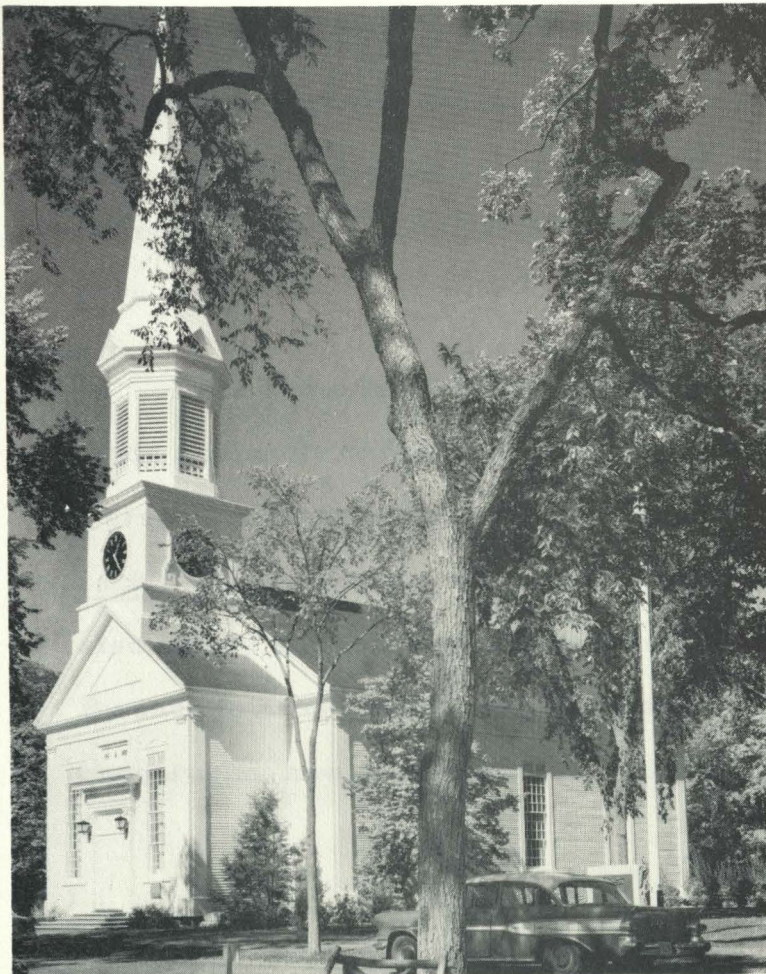
Once interest in the area is developed, each community can put its best foot forward, so to speak, and actively woo the activity to its area. This is the point at which the local community development group can well take a hand in promotional activities by showing the features of the community and convincingly demonstrating that there would be more advantage to situating there than in any other community. However, this must be done in good taste and not to the detriment of the region itself.

Communities should look to their local development group to actively plan and solicit new economic activities. The

advantages of such a group stem from the guidance it can give to development planning and to the assistance it can lend to the person responsible for local development in promotional activities. The group should consist of prominent businessmen, local government officials, and other influential persons in the community.

4. The Community Must Make Itself Attractive to Industry

One of the first steps in developing industry is to create a pleasing business and community atmosphere. In addition to a neat physical appearance, the community should be attractive



from the standpoint of its over-all business climate: the receptivity to economic activities, the cooperating of local government officials, the interest of the townspeople and businessmen, a reasonable tax structure, attractive housing, school and recreation provision, and general long range zone planning.

5. Promotional Activities Should Include Personal Contact and Promotional Literature

Two of the best methods of promoting a community employ promotional literature and personal contact. It is well to remember that the first step to eliciting new economic activity to the community is to create interest. A suitable brochure, not elaborate but professionally prepared, is perhaps one of the most effective inexpensive means to do this. Simple fact sheets can be used initially. The community audit program of Conway Publications in Atlanta, Georgia might also be considered for potential promotion.

Once some interest is generated, the personal contact lends a friendly and helpful air to the promotion of the community. Personal contact and promotion should be considered a part of each advisory group's activities. And others in the community also should actively participate promotion whenever possible. By such joint endeavor, one of the most effective means to encouraging new growth will be utilized.

6. The Community Should Strive to Encourage the Expansion of Present Industry as Part of Its Development Program

Many times a source of new activity is in the community itself and needs only to be exploited. Can the community's present industry be expanded - can new products be developed, new markets secured, volume made greater? How about starting a new industry? Products that are purchased outside the community might be produced locally, subcontract work for other industries can be considered, and other possibilities exist. Perhaps local businessmen and the community itself can sponsor such a new venture.

The important thing is to spend some time in creatively looking in one's own backyard. Too frequently it is felt that new activity can only originate by being imported from other areas. The local community development group can provide the mechanism for systematically reviewing each of the local activities for growth potential.

PROGRAM FOR THE DEPARTMENT OF ECONOMIC DEVELOPMENT

VI. THE DEPARTMENT OF ECONOMIC DEVELOPMENT SHOULD BE CONSIDERED A STAFF FUNCTION WITH THREE PRIMARY OBJECTIVES:

- . EXPAND PRESENT INDUSTRY
- . ENCOURAGE THE FORMATION OF NEW INDUSTRY
- . BRING NEW ECONOMIC ACTIVITIES TO THE STATE

The main objectives of the DED should be the expansion of those economic activities that presently exist in the State, the encouragement of new economic activities, and the attraction of new economic activities from the outside.

The operation of DED should be considered a staff activity. It should conceive programs to further expansion. While its State functions will necessitate the development of promotional material and contact work with potential industries, in its relationship to communities, it should act as a consultant, planner, and stimulant.

VII. A MAJOR FUNCTION OF DED IS TO ACT AS A CATALYST AND A STIMULANT

The responsibility for economic development must ultimately reside in the community itself. The Department of Economic Development can assist, however, in planning and guidance.

In such programs, it must be remembered that area development takes time, and this time element presents one of the most formidable obstacles to overcome. If results are not achieved within a few months, the enthusiasm of communities tends to slump. Soon the program is considered a failure. Communities must be made to understand that quite frequently major results take upwards of 6 months to a year or more to achieve.

DED must act as a catalyst and a stimulator to maintain programs until results are achieved. It must generate enthusiasm and continued determination on the part of state officials and the community. In many cases it must prod them into action . . . on and on.

VIII. IN ITS ACTIVITIES DED MUST PLAN FOR OTHER IMPORTANT FUNCTIONS

A "Citizens Action Committee" Should Be Established - The purpose of the Action Committee will be to expand economic development activities and to assist in promoting Maine. This Committee should be spearheaded by the Department of Economic Development, and it should be comprised of leaders in various areas: industry, business, education, and finance, among others. Preferably the Committee should have between 15 and 20 members, and could well include representatives from strong women's organizations.

The Committee should participate in planning and in promotional programs. In affect, it can be considered an extension of DED.

DED Should Assist Present Industry in Expansion Programs -

In this function, DED can act as representative of and consultant to smaller industries in their formative stages. DED can assist the larger corporations in various State/industry problems and in expansion planning.

Various programs can be developed which would encourage expansion into new markets and products. Some devices to expand industry are:

- (1) Exhibits of business opportunities
- (2) New products, new methods, and patents exhibits
- (3) Industry group meetings

The Action Committee could find this type of activity quite effective for promotional planning.

The State's Economic Development Program Must Be Promoted -

Creating interest in the State is one of the most important functions of DED. In addition to developing and disseminating promotional literature, a major part of this function should be achieved through contacts - both personal and especially through group meetings.

Field calls on prospective industry should be continued. These calls should be based on leads which can be developed from such sources as: requests for information from various concerns, businessmen, financial institutions, realtors, representatives of utilities, and trade associations, and others.

Publish a brochure specifically on area development

Promotional literature should be designed to introduce the recipient to the State, its people, its facilities, and its assets. A good professional job in promotional pieces is necessary to effect favorable reception. This material should be distributed to prospects and to various groups active in plant location such as realtors, real estate departments of various concerns, etc.

Techniques of contacting

Other promotional activities could include:

- . State-wide promotional tours for industry representatives
- . "Flying Squadron" - Teams of community leaders sent on promotional tours outside the State
- . Talks at conferences, seminars and meetings of various industry and professional groups outside the State

DED Should Guide Community Development Groups - One of the important ways in which the State can attract new activities is to have a strong body of well organized community development groups throughout the State. DED should be the planning force and the guiding light in this important activity.

DED should perform the following functions in building strong community groups:

- (1) Guide the organization of the group
- (2) Assist in selecting strong leaders
- (3) Provide training in functions and techniques
- (4) Encourage regional groups
- (5) Hold periodic conferences (preferably every three months)

- (6) Publish a brochure specifically on area development information

A State-wide training program which would cover the following topics in economic development is suggested:

- . The functions of area development
- . Making the community attractive to industry
- . Techniques of contacting
- . The design of promotional material
- . Techniques in personal contact

Legislation Affecting Business Should Be Reviewed - Legislation must encourage business. As specialists in business activities, the DED is in a favorable position to advise legislation on the impact of various laws on industrial activities. By reviewing legislation, DED can recommend programs and laws which would reflect the needs of industry and economic development.

Research Programs Should Be Conducted - Research is needed to secure information for use in development and planning activities. Two kinds of research are warranted:

- (1) The short research type used to secure specific information for industries and legislators, and
- (2) the longer more complete type of research on basic problems, and development programs.

A Favorable Business Climate Should Be Of Prime Concern -
The DED should cultivate and encourage a favorable business climate

throughout the State. Business climate relates to all of the considerations that influence business . . . the attitude of officials and townspeople, the community spirit, worker capability and willingness, the cooperation of municipalities, utilities and transportation agencies, and so forth.

Periodic Business Conferences and Industry Meetings Should Be Promoted - A State-wide conference has the dual advantage of upgrading the talents in the State through providing seminar programs on subjects of interest to businessmen, and also serves to review and encourage economic development activities on a broad scale.

The industry meetings should be designed to encourage industry wide expansion in the State. By use of a group meeting of a single industry, common problems can be discussed, information can be exchanged, and a plan to promote Maine industry formulated. This type of meeting would be particularly appropriate for those industries where associations or co-ops do not exist.

DED Should Act As An Information Center - To Industry and Communities - For those expressing interest in the State and desiring regional or community information, DED should have available fact sheets and other appropriate information to furnish them. Communities should be encouraged to provide this material to DED as well as to the office of area development in Washington, D.C.

The DED should also maintain current information on Federal programs involving financial and technical assistance to communities.

Reference to such available material can be made in the proposed newsletter to community development groups.

IX. BY BEING STAFFED WITH COMPETENT, AGGRESSIVE PERSONNEL
DED CAN DIRECT ECONOMIC GROWTH IN THE STATE

Much of the load of building up the State and local community groups will initially fall on the shoulders of DED. To do an effective job, the DED must continue to be staffed with persons who know their work, are gregarious, and will aggressively promote the various programs needed to attain growth. The degree of success attained will, in many ways, relate to the caliber of the DED staff and the cooperation they receive from legislators, the community development groups, and especially, the people of Maine.

* * * *

This chapter outlined some of the more basic concepts and activities which must receive the whole hearted support of the people and government of Maine if economic growth is to be achieved effectively. A good number of the programs and activities outlined are now being carried out to various degrees. The purpose of this chapter is to present conceptually in one place, an integrated appraisal of the conditions which must be achieved in expanding existing and in attracting new economic activity.

A detail plan of action for achieving these conditions is presented in Volume V of this report entitled, "Recommendations and Conclusions"

CREDITS

CREDITS

It is customary at the completion of a research program to acknowledge the contribution of those who have participated in the program.

In this case, the major acknowledgement must be made to the people of the State of Maine. Throughout the program, the members of the study team received the unequivocal cooperation of all who were contacted in the government, business, commerce and in the general public.

In addition to the general aid offered by Maine people, extremely valuable guidance and specific contributions were made by the State's Department of Economic Development. Commissioner L. Allen, Mr. S. Tani, among many others on the study Steering Committee, contributed unselfishly of their time and efforts.

At the Armour Research Foundation consultation was held with a wide number of specialists in each of nine research divisions. The primary cognizance of the program resided with the Techno-Economics Research Division. Mr. H. Stern was primarily responsible for the evaluation of Maine's assets and studied the potential of the food processing industry. Mr. B. Wien analyzed the current state and the outlook of the shoe and textile industries. Mr. E. Andrie coordinated the over-all activities of the study and was responsible for the analysis of the paper and pulp and woodworking industries, as well as identifying new economic activities suited for location

ARMOUR RESEARCH FOUNDATION OF ILLINOIS INSTITUTE OF TECHNOLOGY

in Maine.

The study team collaborated through all phases of the program and jointly formulated the recommended plan of action.

It has been a pleasure working with the people of Maine. We believe the findings of this report provide a basis for achieving substantial economic growth in the State.

Respectfully submitted,

ARMOUR RESEARCH FOUNDATION
of Illinois Institute of Technology

George Philips
Techno-Economics Research

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